



Environmental Permit No. EP-457/2013/C

Central Kowloon Route

Independent Environmental Checker Verification

Works Contract:

Yau Ma Tei East (HY/2014/08)

Reference Document/Plan

Document/Plan to be Certified/ Verified:	Construction Noise Mitigation Measure Plan
Date of Report:	- (Rev. 15.5)
Date received by IEC:	4 March 2021

Reference EP Condition

Environmental Permit Condition: 2.9

To further reduce the air-borne construction noise impacts on Yau Ma Tei Catholic Primary School (Hoi Wang Road), Tak Cheong Building, Prosperous Garden Block 1, The Coronation Tower 1, Ko Fai House of Kwun Fat Court, Grand Waterfront Tower 3 and Hang Chien Court Block J, the Permit Holder shall, no later than one month before the commencement of construction of the corresponding component(s) of the Project, submit to the Director for approval four hard copies and one electronic copy of an updated Construction Noise Mitigation Measure Plan (CNMMP). The plan shall include:-

- (a) a schedule of construction works to be carried out at the works areas of the Project within 300m from the NSRs;
- (b) an updated construction methodology of the construction works;
- (c) an updated powered mechanical equipment (PME) list for the construction works;
- (d) an updated proposal of air-borne construction noise mitigation measures for the Noise Sensitive Receivers as mentioned above, including the provision of noise barriers, enclosures;
- (e) other initiatives proposed by the Permit Holder; and
- (f) an updated prediction of noise levels in accordance with the above updated information and mitigation proposals in place.

Before submission to the Director, the CNMMP shall be certified by the ET and verified by the IEC as conforming to the relevant information and recommendations contained in the EIA Report. The approved CNMMP shall be fully and properly implemented.

IEC Verification

I hereby verify that the above referenced document/plan complies with the above referenced condition of EP-457/2013/C.

Ms Mandy To

Date: 4 March 2021

Independent Environmental Checker

Build King – SKEC Joint Venture

Central Kowloon Route Contract HY/2014/08

Yau Ma Tei East Section

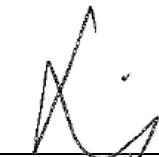
Construction Noise Mitigation Measures Plan

Rev.15.5

Certified by:

Position: Environmental Team Leader

Date: 4 March 2021



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PART A GENERAL

1.0 Background

1.1 Project Description

Central Kowloon Route (CKR) was proposed in the West Kowloon Reclamation Transport Study that a route in tunnel should be developed to link the West Kowloon Highway since 1990.

Highways Department (HyD) commissioned the Design and Construction Assignment for the Central Kowloon Route in June 1998. CKR is a dual 3-lane trunk road across central Kowloon linking the West Kowloon in the west and the proposed Kai Tak Development (KTD) in the east. The CKR will be about 4.7km long with an underground tunnel section of about 3.9km long, in particular, there will be an underwater tunnel of about 370m long in Kowloon Bay to the north of the To Kwa Wan Typhoon Shelter. It will connect the West Kowloon Highway at Yau Ma Tei Interchange with the road network at Kowloon Bay and the future Trunk Road T2 at KTD which will connect to the future Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) and Cross Bay Link (CBL). CKR, Trunk Road T2 and TKO-LTT will form a strategic highway link, namely Route 6, connecting West Kowloon and Tseung Kwan O. Consultancy studies for Trunk Road T2, TKO-LTT and CBL have been commissioned by CEDD. In addition, 3 ventilation buildings, which will be located in Yau Ma Tei, Ho Man Tin and ex-Kai Tak airport area, are proposed to ensure acceptable air quality within the tunnel.

The Central Kowloon Route – Design and Construction Environmental Impact Assessment Report (Register No.: AEIAR-171/2013) was approved with conditions by the Environmental Protection Department (EPD) on 11 July 2013. An Environmental Permit (EP-457/2013) was issued on 9 August 2013. Variations of EP (VEP) was subsequently applied for and the latest EP (EP-457/2013/C) was issued by EPD on 16 January 2017.

Build King - SKEC Joint Venture (BKSJV) was commissioned by Highways Department as the appointed main contractor for Contract No. HY/2014/08: Central Kowloon Route – Yau Ma Tei East (YMTE).

The Works to be executed under this Contract included, but not exclusively, the following items:

- Construction of approximately 390m long cut-and-cover tunnel between Yau Cheung Road and Shanghai Street;
- Construction and subsequent handover of Yau Ma Tei Access Shaft for facilitating the access and using by the contractor of CKR – Central Tunnel contract for the construction of tunnelling works of CKR;
- Construction and maintenance of a composite building for the temporary Public Library cum Jade Hawker Bazaar and a building for the temporary Maternal and Child Health Centre;
- Re-provisioning of a Methadone Clinic in the Yau Ma Tei Jockey Club Polyclinic Building;
- Demolition of the existing Yau Ma Tei Multi-storey Carpark Building, the existing Yau Ma Tei Specialist Clinic Extension Building and the existing Yau Ma Tei Jade Hawker Bazaars;
- Demolition of existing Subway No. KS55 and ancillary buildings of existing Yau Ma Tei Police Station;
- Design and construction of the Noise Barrier Works
- Demolition and re-provisioning of a section of Gascoigne Road Flyover (GRF) between Nathan Road and Ferry Street. Implementation of temporary measures for maintaining the normal operation of the GRF during the contract period;
- Other civil works

A Site Layout showing the site boundary is shown in **Appendix A**.

1.2 Requirements for Construction Noise Mitigation Measure Plan (CNMMP)

According to the condition 2.9 of the EP-457/2013/C, the Permit Holder shall, no later than one month before the commencement of construction of the Project, submit to the Director of Environmental Protection (DEP) for approval four hard copies and one electronic copies of an update Construction Noise Mitigation Measure Plan (CNMMP) to further reduce the air-borne construction noise impacts on Yau Ma Tei Catholic Primary School (Hoi Wang Road), Tak Cheong Building, Prosperous Garden Block 1, The Coronation Tower 1, Ko Fai House of Kwun Fat Court, Grand Waterfront Tower 3 and Hang Chien Court Block J. In view of the worksites location under this contract and their respective distance to the above NSRs (300 meters study area according to the EIA methodology), predicted noise impact on Yau Ma Tei Catholic Primary School (Hoi Wang Road), Tak Cheong Building, Prosperous Garden Block 1, The Coronation Tower 1 are studied in this CNMMP, while that of Ko Fai House of Kwun Fat Court, Grand Waterfront Tower 3 and Hang Chien Court Block J would be assessed in other Sections of the Central Kowloon Route according to their worksite location.

The CNMMP shall include:

- A schedule of construction works to be carried out at the works areas of the Project within 300m from the Noise Sensitive Receivers (NSRs);
- An updated construction methodology of the construction works;
- An updated powered mechanical equipment (PME) list for the proposed construction works;
- An updated proposal of air-borne construction noise mitigation measures for the Noise Sensitive Receivers as mentioned above, including the provision of noise barriers, enclosures;
- Other initiatives proposed by the Permit Holder; and
- An updated prediction of noise levels in accordance with the above updated information and mitigation proposals in place.

Before submission to the Director, the CNMMP shall be certified by the ET and verified by the IEC as conforming to the relevant information and recommendations contained in the EIA Report (Register No. AEIAR-171/2013).

2.0 Description of Construction Works in the Study Area

2.1 Noise Sensitive Receivers

According to Further Environmental Permit No. FEP-02/457/2013/C for CKR-YMTE, 4 Noise Sensitive Receivers (NSRs) would be addressed in this CNMMP. The 4 NSRs are Yau Ma Tei Catholic Primary School (Hoi Wang Road) (W-N1A), Tak Cheong Building (W-N8A), Prosperous Garden Block 1 (W-N25A) and The Coronation Tower 1 (W-P11).

The list of NSRs are shown in **Table 2.1**. The Layout plans of the works area showing the NSRs and their distance to the works area are provided in **Appendix A** and **Appendix D**.

Table 2.1 List of Noise Sensitive Receivers (NSRs)

NSRID	NSR Description	Use ^[1]	Criterion, dB(A) ^[2]	Maximum Construction Noise Levels, dB(A) ^[3]		Noise exceedance, dB(A) ^[3]
				Unmitigated	Mitigated	
W-N1A	Yau Ma Tei Catholic Primary School (Hoi Wang Road)	E	70(65)	82	70 (69)	-(4)
W-N8A	Tak Cheong Building	R	75	95	82	7
W-N25A	Prosperous Garden Block 1	R	75	93	81	6
W-P11	The Coronation (West Façade)	R	75	88	77	2

Notes:

[1] R- Residential; E- Educational Institution; GIC- Government, institution and community

[2] Values in parentheses indicate the noise criterion during examination period of educational institution

[3] Data are extracted from Tables 5.13 and 5.16 of approved EIA Report”

2.2 Construction Methodology

The proposed construction methodology is generally following that presented in Section 3.5 of the approved CKREIA Report (Register No. AEIAR-171/2013). The tunnel section of Yau Ma Tei (from Hoi Wang Road to Shanghai Street) will be constructed by ‘top-down’ cut-and-cover method to reduce impact upon the surrounding area, pedestrians and road traffic.

A breakdown of the major construction activities in sequence to be carried out within the contract are provided in **Appendix B**.

2.3 Updated Preliminary Construction Programme

The updated preliminary construction programme prepared by BKSJV has been used in this CNMMP and has been presented on a monthly basis for the duration of the construction works in corresponding worksites.

Since the commencement of the project has been delayed for 3 years., the potential concurrent projects have been reviewed. Upon reviewing the concurrent projects close to YMTE, other than YMTW section under CKR itself, there is no additional potential concurrent projects which would have cumulative construction noise impacts on the NSRs during the construction phase. The concurrent effect on noise impact contributed by YMTW section is also considered.

The construction schedule has been adjusted such that to minimize concurrent construction works to be carried out in the vicinity as far as practicable. The updated preliminary construction programme is provided in **Appendix B**.

2.4 Updated Powered Mechanical Equipment List

The updated Powered Mechanical Equipment (PME) list for the construction works is provided in **Table 2.2**. The Sound Power Levels (SWL) for the PMEs have been adopted from EPD’s Technical Memorandum on Noise from Construction Work Other than Percussive Piling (GW-TM), list of SWLs of other commonly used PME or British Standard 5228 - Part 1:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites. It should be noted that the PMEs proposed are

commonly available in Hong Kong market. The PMEs to be adopted for individual construction activities for this contract are provided in **Appendix C**.

Taking into account the latest construction programme and PME inventory, extra quiet PME for dump truck, roller and vibratory are proposed in addition to the quiet PME proposed in the Approved CKR EIA Report. The quiet PME as listed in Table 2.2 could be found in Hong Kong. However, if the exact model specified in the references of the listed quiet PME are not available during the construction period, the model with SWL not higher than the listed SWL shall be adopted. BKSJV has also confirmed that the programme and plant inventory are reasonable and practicable for completing the works of CKR-YMTE within the scheduled timeframe.

Table 2.2: List of Updated Powered Mechanical Equipment (PME)

PME Description	TM Ref./ Other Ref. ^(a) / BS 5228 Ref. ^(b) / QPME ID Code ^(c)	Unit Sound Power Level, SWL dB(A)
Air Compressor	CNP003	104
Asphalt Paver	EPD-01226	104
Bar Bender and Cutter	CNP021	90
Bored Piling Crane mounted auger	BS D4-37	111
Breaker, Excavator Mounted (Hydraulic)	BS D8-13	110
Bulldozer	CNP030	115
Compactor, vibratory	CNP050	105
Concrete Core	CNP042	117
Concrete Lorry Mixer	CNP044	109
Concrete pump	CNP047	109
Concrete crusher, excavator mounted	CNP055	103
Crane Mobile	BS D7-114	101
Dump Truck with Grab	CNP069	105
Excavator/Loader, Wheeled/Tracked	EPD-09560	99
Forklift	XRL - HK Section EIA	104
Generator	CNP103	95
Grout mixer	CNP105	90
Grout pump	CNP106	105

Lorry	CNP142	105
Piling, Diaphragm Wall, Bentonite Filtering Plant	CNP162	105
Piling, large dia bored, oscillator	CNP165	115
Poker, Vibratory, Hand Held	CNP173	102
Rock Crusher	Reference to approved West Island Line EIA report	118
Rock drill, crawler mounted (pneumatic)	SIL EIA	108
Rock Drill	SIL EIA	108
Road Roller	EPD-01183	97
Saw, Circular Wood	BS D7-79	103
Saw, Concrete	CNP203	115
Saw, Wire	CNP205	101
Tracked crane	BS D7-114	101
Ventilation Fan	CNP241	108
Water Pump, Submersible (Electric)	CNP283	85

Note:

- (a) Other references refer to the approved West Island Line EIA Report/South Island Line (East) EIA Report/Hong Kong Section of Guangzhou – Shenzhen – Hong Kong Express Rail Link/SWLs of other commonly used PME provided in the document prepared by the Noise Control Authority (http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)
- (b) BS 5228 Ref. refers to British Standard 5228 - Part 1:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites
- (c) QPME ID Code refer to Quiet Powered Mechanical Equipment from EPD's website
http://www.epd.gov.hk/cgi-bin/npg/qpme/search_gen.pl?lang=eng

3.0 Noise Assessment and Proposed Mitigation Measures

3.1 Assessment Methodology and Assumptions

The scope of this plan does not cover all the construction works of West Portion of CKR Project. This Plan only includes the noise assessment for CKR-YMTE's works area and the remaining works areas shall be addressed by another CKR contract namely CKR-YMTW. However, the cumulative effect from YMTW will be considered in the noise assessment of this Plan. Worksite S13 is located within the site boundary of both YMTE and YMTW. However, the construction of landscape deck at worksite S13 will be carried out by YMTW only and thus the noise assessment is not included in this plan, but the noise assessment is included in the cumulative effect of this plan. Besides, according to the contract information provided by HyD, some construction activities at worksites are different from those mentioned in EIA report or not included in the scope of works of YMTE contract. Worksite S9 is construction of Community Liaison Centre for CKR project and worksite S7 is the construction of Temporary Library & Temporary Jade Market. Activities in worksites S48 is the construction of Ferry Street Subway, which is not the scope of works under YMTE contract as per the contract information.

The construction noise assessment has been carried out in accordance with the methodology used in the approved CKR EIA Report (Register No. AEIAR-171/2013). Notional source distances adopted in the calculation has made reference to those used in the CKR EIA Report (Register No. AEIAR-171/2013) except worksite S3, S4, S5 and S13 according to the updated construction layout as provided in **Appendix A**. The updated distance between NSRs and worksite are tabled in **Appendix D**.

The percentage on-time for each PME has been estimated individually for each construction activity to ensure practicality and is consistent with assumptions made in CKR EIA Report (Register No. AEIAR-171/2013).

The BKSJV has confirmed that the programme and plant inventory are reasonable and practicable for completing the Works Contract within the scheduled timeframe.

All mitigation measures and their effectiveness proposed in the CKR EIA Report (Register No. AEIAR-171/2013) including the use of temporary movable noise barrier and enclosure (with sufficient ventilation) for relatively static plant, acoustic mat and quiet plant have been considered in this CNMMP. The use of quiet plant associated with construction work is prescribed in British Standard

"Code of practice for noise and vibration control on construction and open sites, BS5228" which contains the SWLs for specific quiet PME.

Central Kowloon Route – Yau Ma Tei West (CKR-YMTW) is identified to be concurrent projects of the works at CKR-YMTE. CKR-YMTW commenced in November 2018 and is estimated to complete in October 2024. Cumulative construction noise impact from construction activities of CKR-YMTW is addressed in this CNMMP and detail assessment is shown in Appendix C. For the construction works for two noise enclosures at Gascoigne Road Flyover, they will be carried out under our contract.

3.2 Proposed Mitigation Strategy and Noise Assessment Results

The mitigation measures proposed in the approved CKR EIA report (Register No. AEIAR-171/2013) have been adopted.

Movable temporary noise barriers that can be located close to noisy plant and be moved concurrently with the plant along a worksite can be very effective for screening noise from NSRs. A typical design which has been used locally is a wooden framed barrier with a small-cantilevered on a skid footing with 25mm thick internal sound absorptive lining. This measure is particularly effective for low level zone of NSRs. A cantilevered top cover would be required to achieve screening benefits at upper floors of NSRs. Movable barriers will be used for some PME (e.g. asphalt paver, excavator etc). It is anticipated that suitably designed barriers could achieve at least 5 - 10dB(A) reduction. For a conservative assessment, only a reduction of 5dB(A) is assumed. The use of enclosure (with sufficient ventilation and surface mass at least 10 kg/m²) has been considered in this assessment to shelter relatively static plant including air compressor, generator. The enclosures barriers can provide about 10dB(A) noise reduction. For ventilation fan, enclosure namely SilentCUBE would be used as noise mitigation and -15 dB(A) would be applied in the assessment for conservatism. The details of the noise enclosure are showed in **Appendix F**. BKSJV shall ensure the practicability to block the line-of-sight for nearby NSRs during the usage of noise barriers.

The construction activities to be carried out under traffic deck or underground, will adopt -20dB(A) screening effect has PMEs, except ventilation fan will be located at grade.

For one of the mucking out points in CKR project, the temporary full noise enclosure will be constructed after the access shaft completion to screen off the future construction activities for tunnelling works with the noise reduction of -15dB(A).

For the demolition works of the Yau Ma Tei Mult-storey Carpark Building, temporary noise barrier will be erected at the floor to be demolished surrounding the 4 sides of the building. The temporary noise barriers can provide about 10dB(A) noise reduction. Details of the acoustic noise barriers are shown in **Appendix E**.

The predicted noise levels at identified NSRs after implementation of mitigation measures, including quiet plants, noise enclosure/shed, movable barriers and acoustic fabric are shown in **Appendix C** and summarised in Table 3.1. The mitigation measures and noise control design will be implemented by the frontline staff of the contractor, supervised by the Environmental Officer/ Site Engineer and checked by the ET, IEC and RE during routine site inspection under the EM&A programme. Some of the construction activities will not involve PME and thus are not shown in noise assessment such as worksites S17 and S31 which are decanting of Library and Government Offices in MSCB and YMT Police Station respectively.

Site records, including photos and measurement reports, for substantiating proper implementation of the Plan shall be well kept by the Contractor on site for review/checking by ET/IEC/EPD at any time.

The implementation schedule of proposed mitigation measures is showed in Appendix G.

Table 3.1 Summary of Noise Assessment Result

NSR ID	NSR Description	Predicted Max. Noise Level ^(a) , dB(A)	Noise Criteria ^(b) , dB(A)	Exceedance, dB(A))	Duration (month) of Exceedance ^(c)
W-N1A	Yau Ma Tei Catholic Primary School (Hoi Wang Road)	67(67)	70(65)	-(2)	-(2)
W-N8A	Tak Cheong Building	81	75	6	26
W-N25A	Prosperous Garden Block 1	80	75	5	3
W-P11	The Coronation	75	75	-	-

Note:

- (a) Bolded values mean exceedance of the relevant noise criteria.
- (b) Values in parentheses indicate the noise criterion during examination period of educational institution.
- (c) Typical examination period is in May, June, November and December. The exceedance duration is subject to the examination schedule when available.

With the implementation of the above-mentioned mitigation measures, residual impacts exceeding the construction noise criterion are still expected. The comparison of residual impacts between CKR EIA Report and this CNMMP is shown in Table 3.2.

Table 3.2 Comparison of Residual Impacts between CKR EIA Report and this CNMMP (Residential Premises)

NSR	EIA Prediction							CNMMP Prediction								
	Max. Noise Level, dB(A)	Duration (month) of Exceedance							Max. Noise Level, dB(A)	Duration (month) of Exceedance						
		1-4 dB(A)	5 dB(A)	6 dB(A)	7 dB(A)	1-4 dB(A)	5 dB(A)	6 dB(A)		1-4 dB(A)	5 dB(A)	6 dB(A)	7 dB(A)			
W-N8A	82	26	5	4	2	81	19	4	3	-						
W-N25A	81	6	-	3	-	80	-	3	-	-						
W-P11	77	4	-	-	-	75	-	-	-	-						

Table 3.3 Comparison of Residual Impacts between CKR EIA Report and this CNMMP (Educational Institution During Examination Period)

NSR	EIA Prediction (during exam period)								CNMMP Prediction (during exam period)							
	Duration (month) of Exceedance								Duration (month) of Exceedance							
	1 dB(A)	2 dB(A)	3 dB(A)	4 dB(A)	5 dB(A)	6 dB(A)	7 dB(A)	≥8 dB(A)	1 dB(A)	2 dB(A)	3 dB(A)	4 dB(A)	5 dB(A)	6 dB(A)	7 dB(A)	≥8 dB(A)
W-N1A	2	3	-	1	-	-	-	-	-	2	-	-	-	-	-	-

Table 3.4 Comparison of Residual Impacts between CKR EIA Report and this CNMMP (Educational Institution During Normal Period)

NSR	EIA Prediction (during normal period)								CNMMP Prediction (during normal period)							
	Duration (month) of Exceedance								Duration (month) of Exceedance							
	1 dB(A)	2 dB(A)	3 dB(A)	4 dB(A)	5 dB(A)	6 dB(A)	7 dB(A)	≥8 dB(A)	1 dB(A)	2 dB(A)	3 dB(A)	4 dB(A)	5 dB(A)	6 dB(A)	7 dB(A)	8 dB(A)
W-N1A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

When comparing with the predicted noise impact in the EIA study, the residual impacts predicted in this CNMMP would either remain unchanged or reduced in respect of both exceedances and duration with the implementation of mitigation measures proposed in this CNMMP. Number of months of Examination periods for Yau Ma Tei Catholic Primary School (Hoi Wang Road) predicted to exceed the criterion for school examination periods was reduced from 6 from EIA report to 2 from this CNMMP. Number of months for Tak Cheong Building (W-N8A) predicted to experience the max. noise level (i.e. 82 dB(A)) was reduced from 2 months from EIA report to nil from this CNMMP. The duration (month) of exceedance would also be reduced from 37 from EIA report to 26 from this CNMMP. The predicted max. noise level at Prosperous Garden Block 1 (W-N25A) would be reduced

from 81 dB(A) from EIA report to 80 dB(A) in this CNMMP and the duration of exceedance would be reduced from 9 months from EIA report to 3 months from this CNMMP. Number of months for The Coronation Block 1 (W-P11) predicted to exceed the noise criteria was reduced from 4 months from EIA report to nil from this CNMMP.

Specific measures will be implemented for Tak Cheong Building (W-N8A), which is predicted to experience the most severe exceedance for the longest period. BKSJV will well plan the working programme for those work sites close to W-N8A and try the best to shorten the working hours at weekends or avoid to carry out noisy activities at sensitive hours (0700 – 0900 & 1700 – 1900).

To minimize noise impact generated by frequent construction plants mobilization, the total no. of construction plants parking at worksite S18 and S35 will be higher than those in EIA prediction and last version of CNMMP. However, the percentage on-time for most of the construction plants are no more than those in last version of CNMMP.

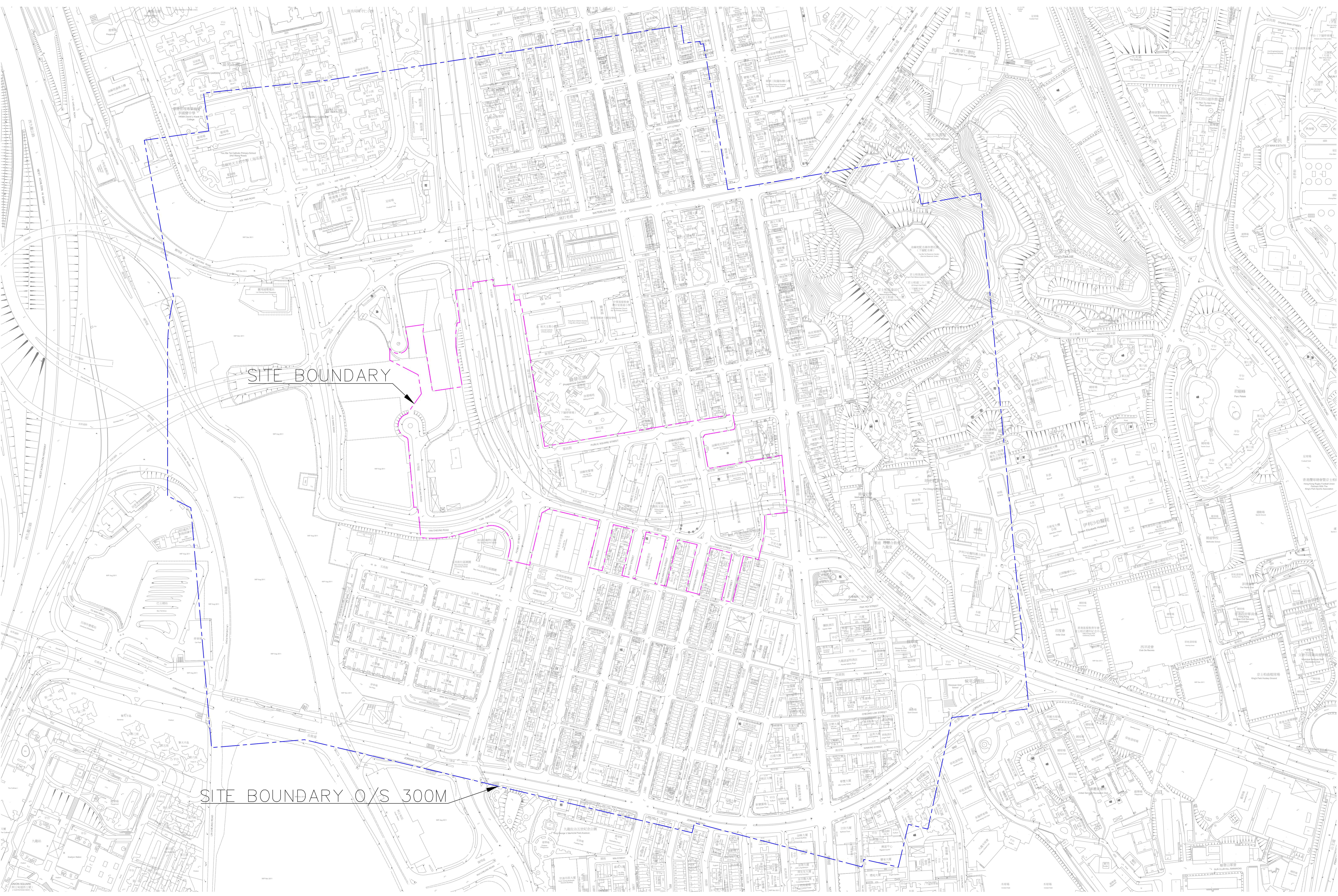
4.0 Conclusion

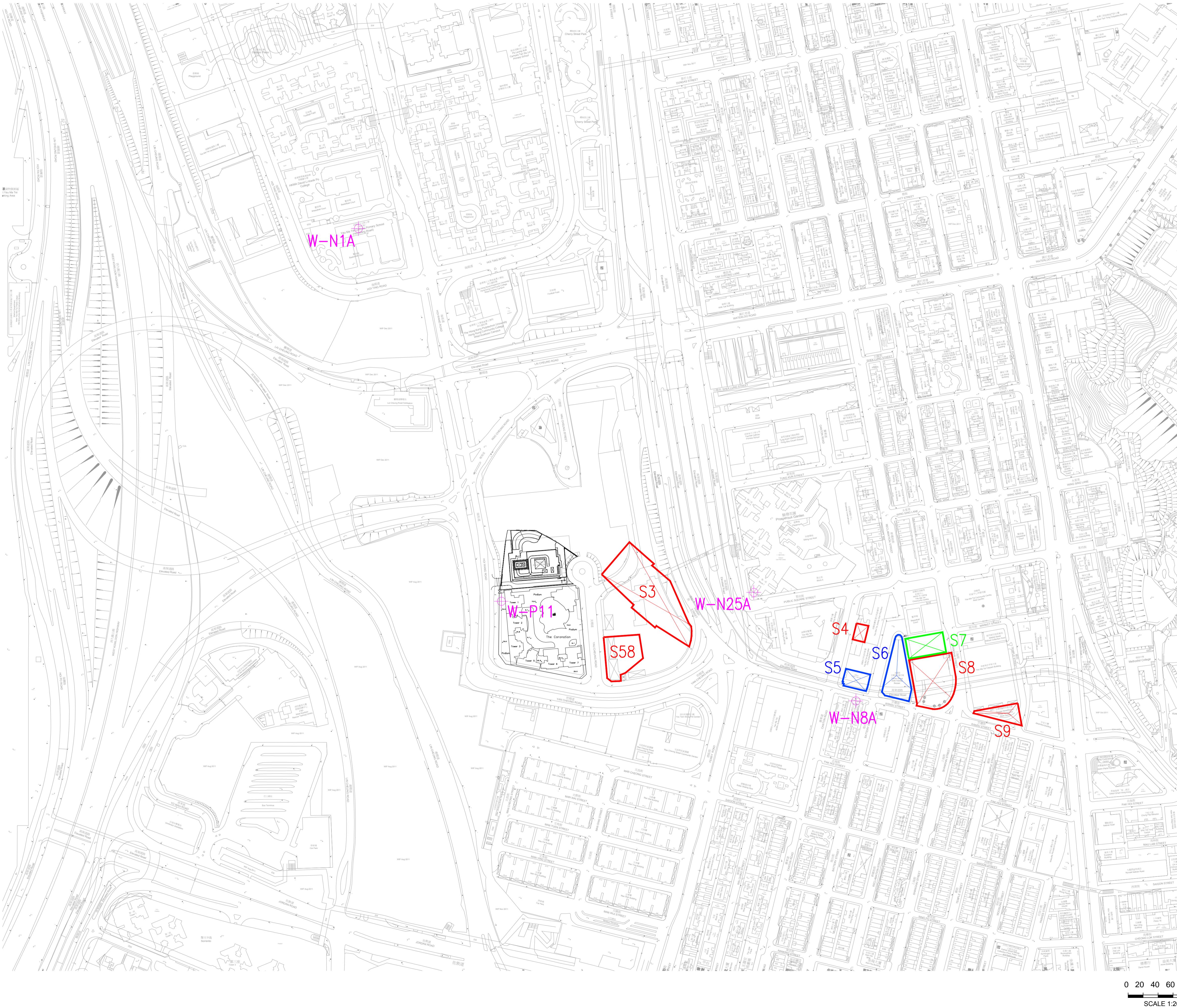
The CNMMP has predicted the construction noise impact from CKR-YMTE to identified NSRs. This plan has taken into account the updated information on PMEs and works programme which would be adopted by BSKJV. With the implementation of mitigation measures in form of quiet plants, barrier and acoustic fabrics, the construction noise impact are predicted would either remain unchanged or to be reduced in respect of both exceedances and duration.

Further review and update will be performed with a frequency of at least every 6 months during the construction phase and liaison with affected parties is recommended to minimise the construction noise impacts as far as practicable.

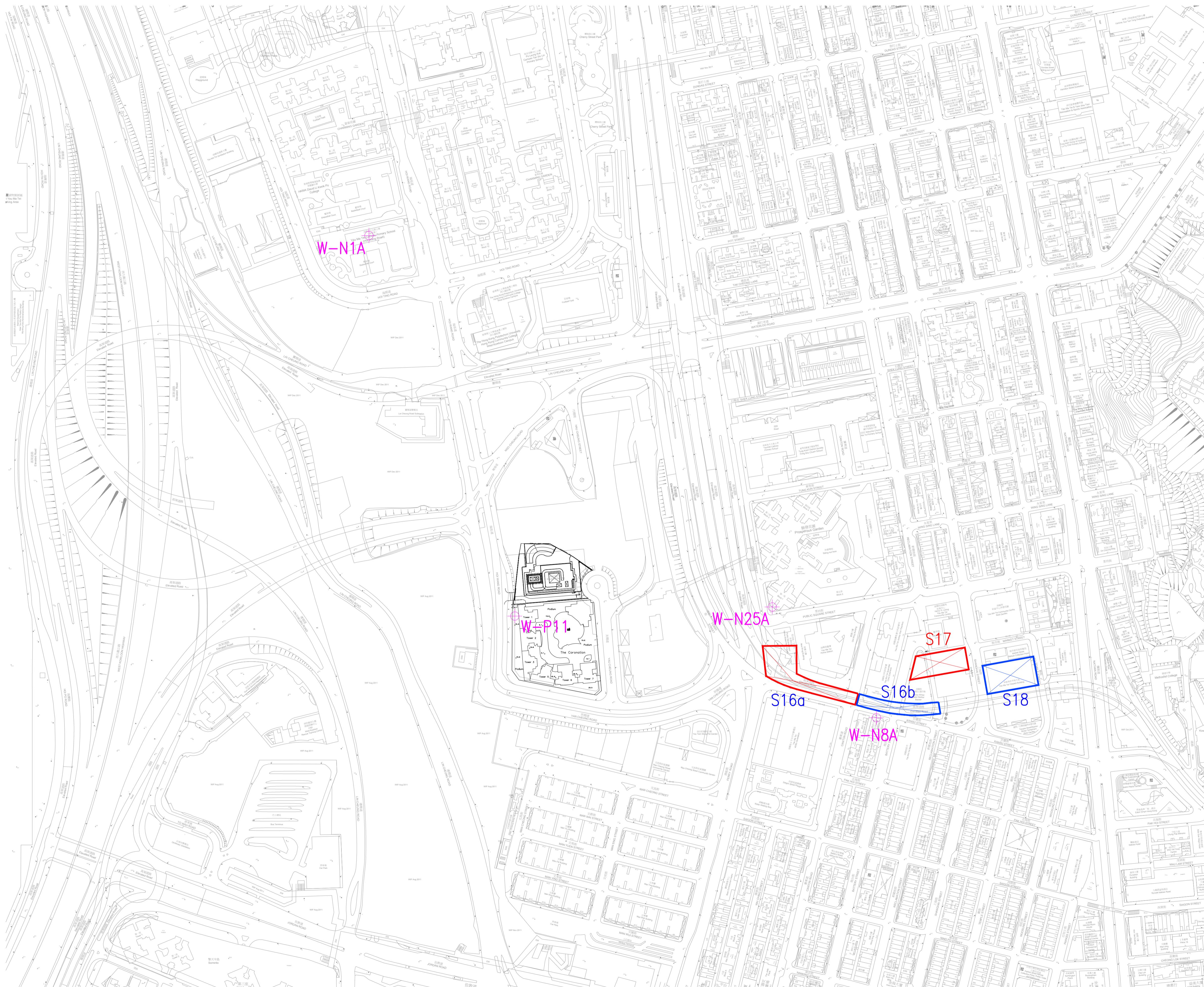
Appendix A

Site Layout and NSR Locations

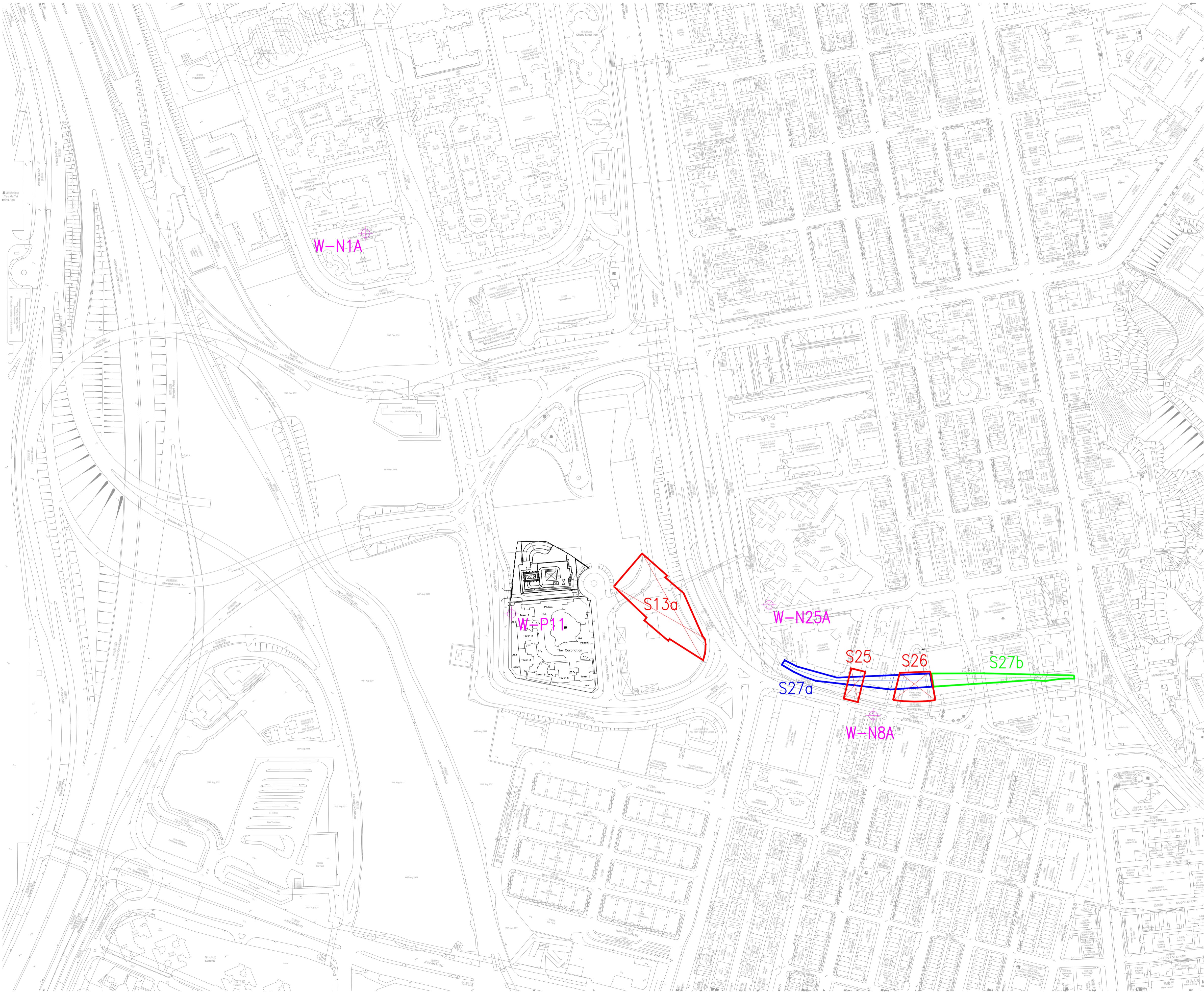




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Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
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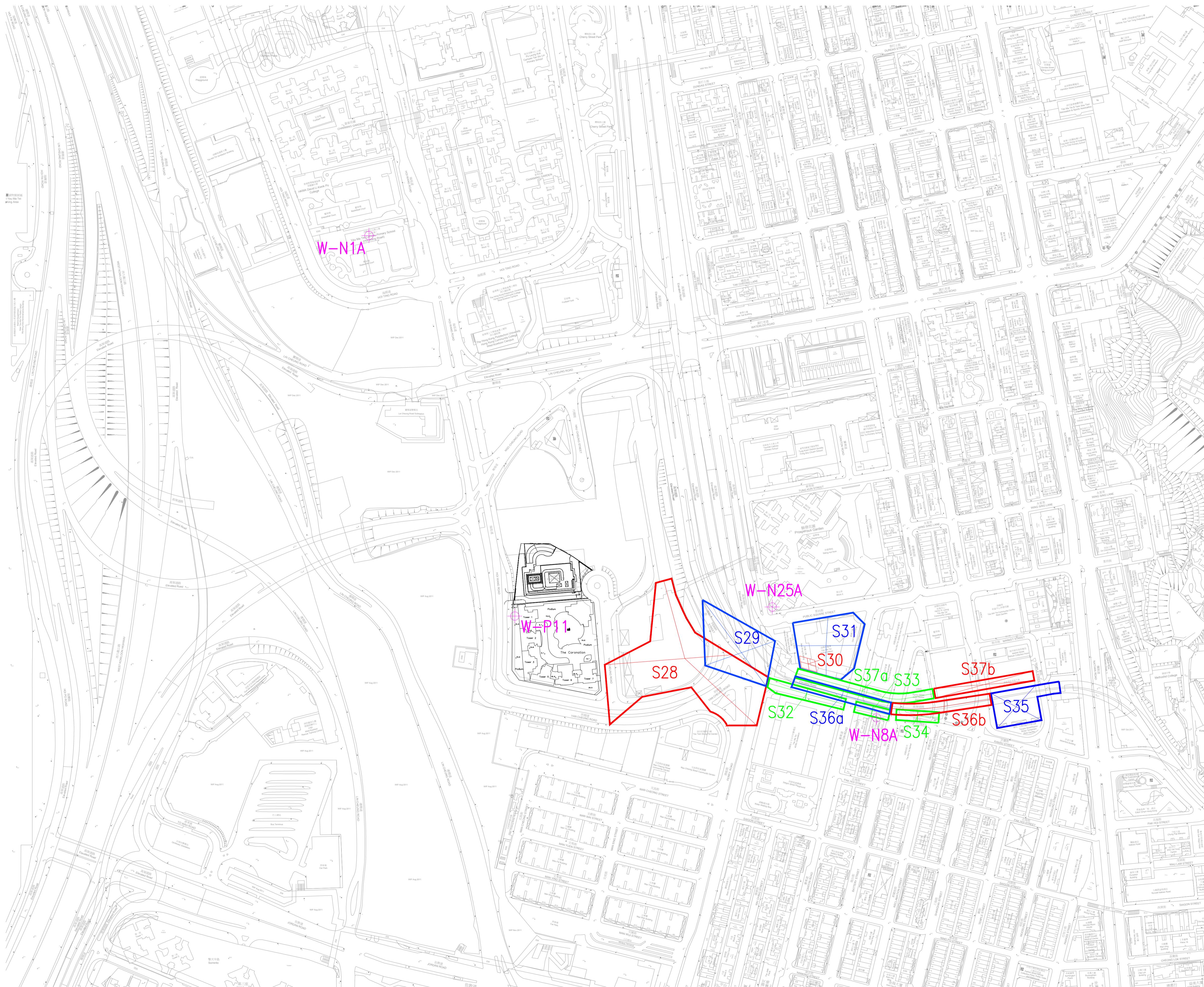


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Contractor 承建商			
BuildKing SK E&C BUILD KING - SKEC JOINT VENTURE			
Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
APPENDIX LOCATIONS OF NSR'S AND NOTIONAL SOURCES (WEST PORTION - STAGE 3)			
Drawing no. 圖紙編號 BKSK/YMTE/C/10003 Rev. B			
Drawn By PC	Checked By LL	Approved By AT	
Scale 1:2000 0A1	比例 1:4000 0A3	Status 項段	SUBMISSION
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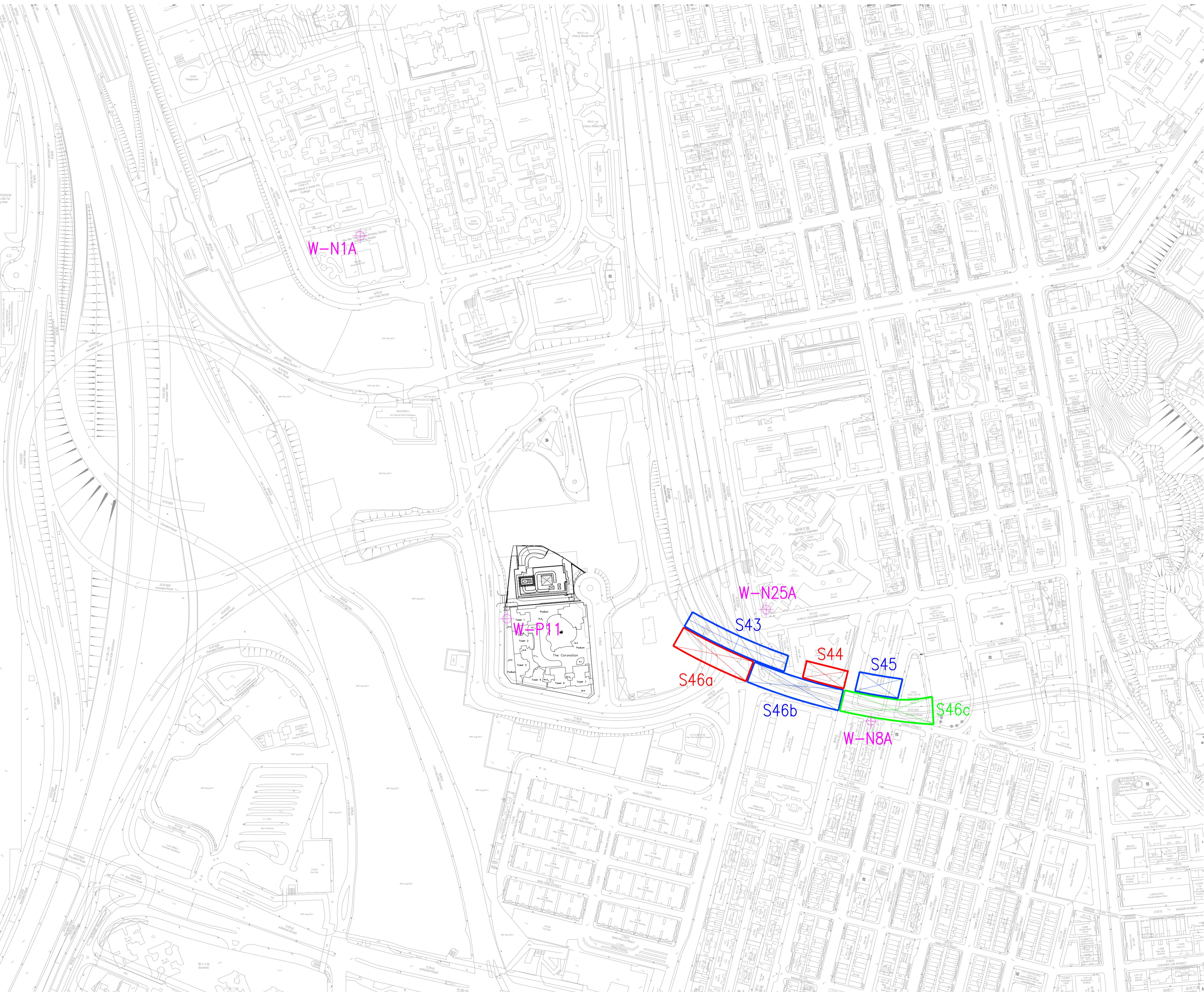
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SCALE 1:2000

B	SUBMISSION	LL	01/21
A	SUBMISSION	LL	03/19
-	SUBMISSION	LL	06/18
Rev.	Description	By	Date
	內容摘要	設計	日期
Contractor 承建商			
Build King SK E&C			
BUILD KING - SKEC JOINT VENTURE			
Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
APPENDIX LOCATIONS OF NSR'S AND NOTIONAL SOURCES (WEST PORTION - STAGE 4)			
Drawing no. 圖紙編號 BKS/K/ YMTE/C/10004 Rev. B			
Drawn By PC	Checked By LL	Approved By AT	
Scale 1:2000 0A1	比例 1:4000 0A3	Status 項段	SUBMISSION
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SCALE 1:2000

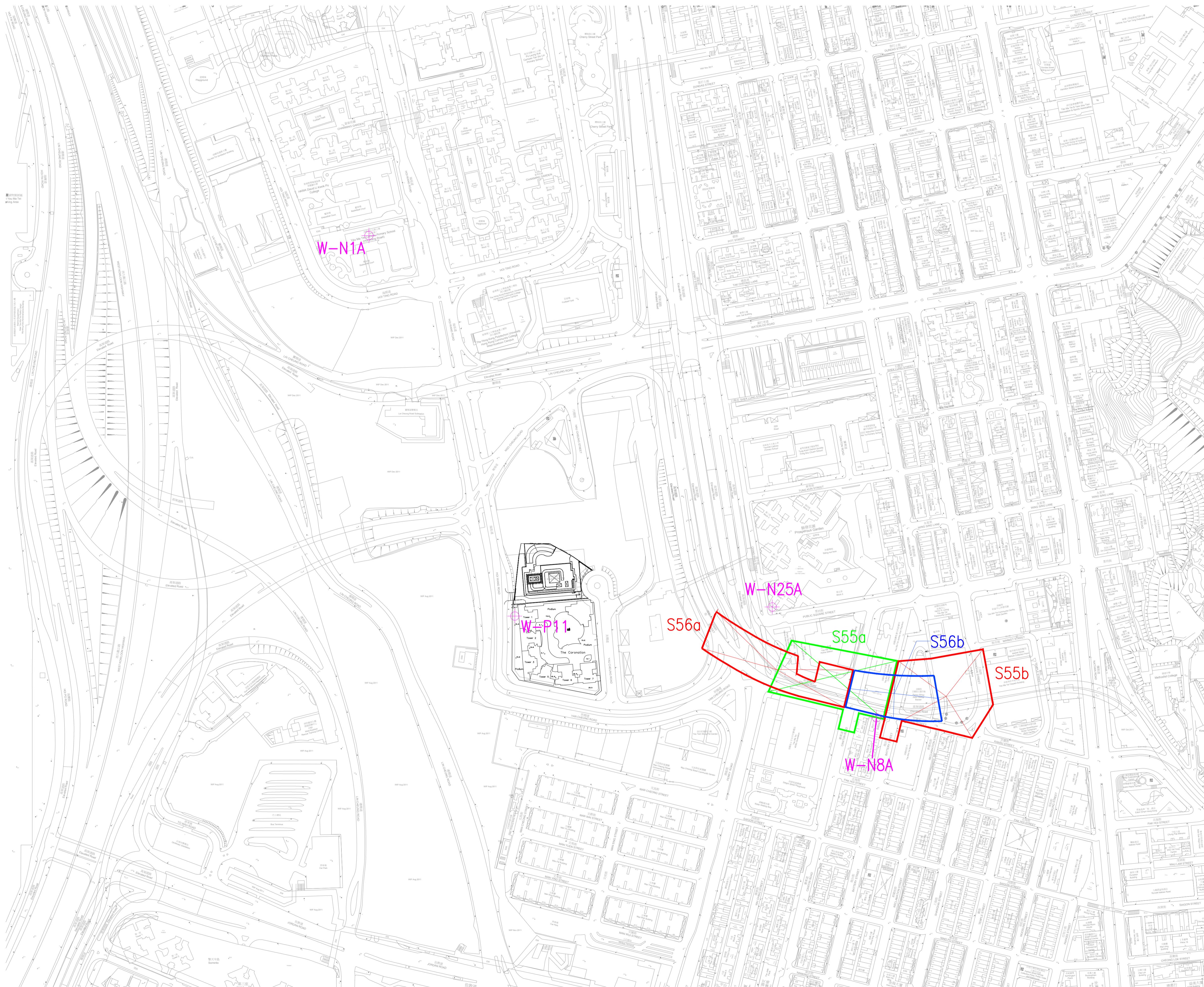
B	SUBMISSION	LL	01/21
A	SUBMISSION	LL	03/19
-	SUBMISSION	LL	06/18
Rev.	Description	By	Date
	內容摘要	設計	日期
Contractor 承建商			
Build King SK E&C			
BUILD KING - SKEC JOINT VENTURE			
Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
APPENDIX LOCATIONS OF NSR'S AND NOTIONAL SOURCES (WEST PORTION - STAGE 5)			
Drawing no. 圖紙編號 BKS/K/ YMTE/C/10005 Rev. B			
Drawn By PC	Checked By LL	Approved By AT	
Scale 1:2000 0A1	比例 1:4000 0A3	Status 項段	SUBMISSION
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B	SUBMISSION	LL	01/21
A	SUBMISSION	LL	03/19
-	SUBMISSION	LL	06/18
Rev.	Description	By	Date
	內容摘要	設計	日期
Contractor 承建商			
Build King SK E&C			
BUILD KING - SKEC JOINT VENTURE			
Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
APPENDIX LOCATIONS OF NSR'S AND NOTIONAL SOURCES (WEST PORTION - STAGE 6)			
Drawing no. 圖紙編號 BKS/K/ YMTE/C/10006 Rev. B			
Drawn By PC Checked By LL Approved By AT			
Scale 1:2000 BA1 比例 1:4000 BA3 Status 項段 SUBMISSION			
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B	SUBMISSION	LL	01/21
A	SUBMISSION	LL	03/19
-	SUBMISSION	LL	06/18
Rev.	Description 內容摘要	By 設計	Date 日期
Contractor 承建商			
Build King SK E&C BUILD KING - SKEC JOINT VENTURE			
Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
APPENDIX LOCATIONS OF NSR'S AND NOTIONAL SOURCES (WEST PORTION - STAGE 7)			
Drawing no. 圖紙編號 BKSK/YMTE/C/10007 Rev. B			
Drawn By PC	Checked By LL	Approved By AT	
Scale 1:2000 0A1	比例 1:4000 0A3	Status 階段	SUBMISSION
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HIGHWAYS DEPARTMENT 主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE			



0 20 40 60 80 100m
SCALE 1:2000

B	SUBMISSION	LL	01/21
A	SUBMISSION	LL	03/19
-	SUBMISSION	LL	06/18
Rev.	Description	By	Date
	內容摘要	設計	日期
Contractor 承建商			
Build King SK E&C BUILD KING - SKEC JOINT VENTURE			
Project title 工程名稱			
Contract No. HY/2014/08			
Central Kowloon Route - Yau Ma Tei East			
Drawing title 圖紙名稱			
APPENDIX LOCATIONS OF NSR'S AND NOTIONAL SOURCES (WEST PORTION - STAGE 8)			
Drawing no. 圖紙編號 BKSK/YMTE/C/10008 Rev. B			
Drawn By PC	Checked By LL	Approved By AT	
Scale 1:2000 0A1	比例 1:4000 0A3	Status 項段	SUBMISSION
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Appendix B

Updated Preliminary Construction Programme

Worksite	Activity	2018					2019					2020					2021					2022					2023								
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
S3	Construct Dwall and Traffic Deck - Piling for King Post																																		
S3	Construct Dwall and Traffic Deck - Diaphragm Walls																																		
S3	Construct Southern Dwall & Traffic Deck - Excavation for Diaphragm Walls																																		
S3	Construct Southern Dwall & Traffic Deck - Concreting for Diaphragm Walls																																		
S3	Construct Southern Dwall & Traffic Deck - Temporary Traffic Deck																																		
S4	Construction of Methodone Clinic																																		
S5	Decant and demolish existing Jade Market																																		
S6	Decant and demolish existing Jade Market																																		
S7	Constructed of Temporary Library & Temporary Jade Market - Foundation																																		
S7	Constructed of Temporary Library & Temporary Jade Market - Superstructure																																		
S8	Construct Western Access Shaft - Ex excavation of Diaphragm Walls																																		
S8	Construct Western Access Shaft - Concreting of Diaphragm Wall																																		
S8	Construct Western Access Shaft - Soil Excavation of Access Shaft																																		
S8	Construct Western Access Shaft - Rock Excavation of Access Shaft																																		
S8	Construct Western Access Shaft - Cast Bottom Slab																																		
S9	Construct Community Liaison Centre																																		
S13a	Removal of Excavated Material through West End Portal																																		
S16a	Construct Middle Dwall and Traffic Deck - Piling for King Post																																		
S16a	Construct Middle Dwall and Traffic Deck - Diaphragm Walls																																		
S16a	Construct Middle Dwall and Traffic Deck - Temporary Traffic Deck																																		
S16b	Construct Middle Dwall and Traffic Deck - Piling for King Post																																		
S16b	Construct Middle Dwall and Traffic Deck - Diaphragm Walls																																		
S16b	Construct Middle Dwall and Traffic Deck - Temporary Traffic Deck																																		
S17	Decant Library and Government Offices in MSCB																																		
S18	Demolish Multi-storey Carpark Building (partially)																																		
S25	Construction Middle Dwall and Traffic Deck (cross road sections) - Diaphragm Walls																																		
S25	Construction Middle Dwall and Traffic Deck (cross road sections) - Temporary Traffic Deck																																		
S26	Construction Middle Dwall and Traffic Deck (cross road sections) - Diaphragm Walls																																		
S26	Construction Middle Dwall and Traffic Deck (cross road sections) - Temporary Traffic Deck																																		
S27a	Construct Proposed GRF Flyover (two lanes) on Northern Side and the Temporary Deck (From Reclamation Street to Ferry Street) - Foundation and pier																																		
S27a	Construct Proposed GRF Flyover (two lanes) on Northern Side and the Temporary Deck (From Reclamation Street to Ferry Street) - Bridge Deck																																		
S27a	Construct Proposed GRF Flyover (two lanes) on Northern Side and the Temporary Deck (From Reclamation Street to Ferry Street) - Surfacing, MJ, noise barriers																																		
S27b	Construct Proposed GRF Flyover (two lanes) on Northern Side and the Temporary Deck (From Temple Street to Reclamation Street) - Foundation and pier																																		
S27b	Construct Proposed GRF Flyover (two lanes) on Northern Side and the Temporary Deck (From Temple Street to Reclamation Street) - Bridge Deck																																		
S27b	Construct Proposed GRF Flyover (two lanes) on Northern Side and the Temporary Deck (From Temple Street to Reclamation Street) - Surfacing, MJ, noise barriers																																		
S28	Diversion of Ferry Street Junction																																		
S29	Construct Southern Dwall & Dwall Crossing Ferry Street - Piling for King Post																																		
S29	Construct Southern Dwall & Dwall Crossing Ferry Street - Grouting for King post																																		
S29	Construct Southern Dwall & Dwall Crossing Ferry Street - Excavation for Diaphragm Walls																																		
S29	Construct Southern Dwall & Dwall Crossing Ferry Street - Concreting for Diaphragm Walls																																		
S29	Construct Southern Dwall & Dwall Crossing Ferry Street - Temporary Traffic Deck																																		
S30	Underpinning Works for YMT Police Station - Grouting																																		
S30	Underpinning Works for YMT Police Station - Sockect B Piling																																		
S30	Underpinning Works for YMT Police Station - micro-piling																																		
S30	Underpinning Works for YMT Police Station - excavation																																		
S30	Underpinning Works for YMT Police Station - pipe piling																																		
S30	Underpinning Works for YMT Police Station - tam grouting																																		
S30	Underpinning Works for YMT Police Station - Construct underpinning beam and slab				</td																														

Construction Programme

Appendix C

Detailed Construction Noise Assessment

Build King - SKEC Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: W-N1A Yau Ma Tei Catholic Primary School (Hoi Wang Road)

Mitigation Measures Scenario

Noise Criteria: 70dB(A), 65dB(A) during exam

Worksite	Activity	Period	PME	TM Ref. / other Ref.	Unit Quiet Plant SWL	On-time, %	Time Factor	Quiet Plant SWL with on-time %	No. of plants	Total SWL	Distance from Notional Sources, m	Distance Attenuation	Façade Correction, dB(A)	Barrier Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
S3	Construct Dwall and Traffic Deck - Piling for King Post	Jul-18	Concrete Lorry Mixer	CNP044	109	60	-2	107	1	107	300	-58	3	-5	47	51
			Concrete pump	CNP047	109	80	-1	108	1	108	300	-58	3	-10	43	
			Dump Truck with Grab	CNP069	105	70	-2	103	1	103	300	-58	3	-5	44	
			Generator	CNP103	95	100	0	95	2	98	300	-58	3	-10	33	
			Lorry	CNP142	105	60	-2	103	1	103	300	-58	3	-5	43	
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	300	-58	3	-5	40	
			Bored Piling Crane mounted auger	BS D4-37	111	70	-2	109	2	112	300	-58	3	-10	48	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	1	97	300	-58	3	-5	38	
			Bar Bender and Cutter	CNP021	90	70	-2	88	1	88	300	-58	3	0	34	50
			Concrete Lorry Mixer	CNP044	109	60	-2	107	1	107	300	-58	3	-5	47	
S3	Construct Dwall and Traffic Deck - Diaphragm Walls	Aug 2018 - Nov 2018	Concrete pump	CNP047	109	80	-1	108	1	108	300	-58	3	-10	43	51
			Generator	CNP103	95	100	0	95	2	98	300	-58	3	-10	33	
			Lorry	CNP142	105	70	-2	103	1	103	300	-58	3	-5	44	
			Poker, Vibratory, Hand Held	CNP173	102	60	-2	100	1	100	300	-58	3	-5	40	
			or													
			Dump Truck with Grab	CNP069	105	70	-2	103	1	103	300	-58	3	-5	44	
			Generator	CNP103	95	100	0	95	2	98	300	-58	3	-10	33	
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	300	-58	3	-5	40	
			Trimming, Diaphragm Wall, Bentonite Filling	CNP162	105	90	0	105	1	105	300	-58	3	-10	40	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	60	-2	97	1	97	300	-58	3	-5	37	
S3	Construct Southern Dwall & Traffic Deck - Excavation for Diaphragm Walls	Nov 2018 - Jan 2019	Dump Truck with Grab	CNP069	105	70	-2	103	1	103	300	-58	3	-5	44	49
			Generator	CNP103	95	100	0	95	1	95	300	-58	3	-10	30	
			Lorry	CNP142	105	70	-2	103	1	103	300	-58	3	-5	44	
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	300	-58	3	-5	40	
			Trimming, Diaphragm Wall, Bentonite Filling	CNP162	105	90	0	105	1	105	300	-58	3	-10	40	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	60	-2	97	1	97	300	-58	3	-5	37	
			Bar Bender and Cutter	CNP021	90	70	-2	88	1	88	300	-58	3	0	34	49
			Concrete Lorry Mixer	CNP044	109	60	-2	107	1	107	300	-58	3	-5	47	
			Concrete pump	CNP047	109	80	-1	108	1	108	300	-58	3	-10	43	
			Generator	CNP103	95	70	-2	93	1	93	300	-58	3	-10	29	
			Lorry	CNP142	105	90	0	105	1	105	300	-58	3	-5	45	
S13a	Construct Southern Dwall & Traffic Deck - Temporary Traffic Deck	Mar-19	Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	1	97	300	-58	3	-5	38	47
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	300	-58	3	-5	40	
S13a	Removal of Excavated Material through West End Portal	Apr 2019 - Mar 2020	Dump Truck with Grab	CNP069	105	70	-2	103	10	113	300	-58	3	-5	54	54

W-N1A

[1] For works that would be conducted in more than one works sites, the distance of the works site closer to the NSR is adopted in the assessment as the worst-case scenario
 [2] Works located outside 300m boundary of the NSR

[2] Works located outside 500m boundary of the NSR are not assessed

[3] For the calcu

[4] The concurrent work that is within 300m of the NSR, CKR YMTW section. Following the YMTW CNMMP, the noise level is extracted for this assessment.

Build King - SKEC Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: W-N25A Prosperous Garden Block 1

Mitigation Measures Scenario

Noise Criteria: 75dB(A)

Worksite	Activity	Period	PME	TM Ref. / other Ref.	Unit Quiet Plant SWL	On-time, %	Time Factor	Quiet Plant SWL with on-time %	No. of plants	Total SWL	Distance from National Sources, m	Distance Attenuation	Façade Correction, dB(A)	Barrier Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
S45	Construct Southern Dwall & Dwall Crossing Ferry Street - Piling for King Post	Jan-21	Generator Lorry Crane Mobile Bored Piling Crane mounted auger Excavator/Loader, Wheeled/Tracked	CNP103 CNP142 BS D7-114 BS D4-37 EPD-09560	95 105 101 111 99	100 60 70 70 70	0 -2 -2 -2 -2	95 103 99 109 97	3 1 1 3 1	100 103 99 114 97	130 130 130 130 130	-50 -50 -50 -50 -50	3 3 3 3 3	-10 -5 -5 -10 -5	42 51 47 57 45	58.5
	Construct Southern Dwall & Dwall Crossing Ferry Street - Grouting	Jan-21	Concrete Lorry Mixer Concrete pump Dump Truck with Grab Generator Lorry Crane Mobile	CNP044 CNP047 CNP069 CNP103 CNP142 BS D7-114	109 109 105 95 105 101	60 80 70 100 70 70	-2 -1 -2 0 -2 -2	107 108 103 95 103 99	2 1 1 4 1 1	110 108 103 101 103 99	130 130 130 130 130 130	-50 -50 -50 -50 -50 -50	3 3 3 3 3 3	-5 -10 -5 -10 -5 -10	58 51 44 51 45 57	58.3
	Construct Southern Dwall & Traffic Deck - Excavation for Diaphragm Walls	Feb 2021 - Mar 2021	Excavator/Loader, Wheeled/Tracked Piling, Diaphragm Wall, Bentonite Filtering Plant	EPD-09560 CNP162	99 105	90 90	0 0	105	2	108	130	-50	3	-5	47	56.7
	Construct Southern Dwall & Traffic Deck - Concreting for Diaphragm Walls	Apr-21	Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Generator	CNP021 CNP044 CNP047 CNP103	90 109 109 95	70 60 80 70	-2 -2 -1 -2	88 107 108 93	1 1 1 1	101 110 108 93	130 130 130 130	-50 -50 -50 -50	3 3 3 3	0 -10 -5 -10	41 51 51 44	58.4
	Construct Southern Dwall & Traffic Deck - Temporary Traffic Deck	May-21	Lorry Excavator/Loader, Wheeled/Tracked Crane Mobile	CNP142 EPD-09560 BS D7-114	105 99 101	90 70 70	0 -2 -2	105 97 99	2 1 1	108 102 102	130 130 130	-50 -50 -50	3 3 3	-5 -5 -10	55 50 50	56.8
S46a	Excavation of Tunnel Tubes (under cover of traffic deck)	Oct 2021 - Jan 2022	Generator Excavator/Loader, Wheeled/Tracked Rock drill, crawler mounted (pneumatic) Ventilation Fan Water Pump, Submersible (Electric)	CNP0560 SIL EIA CNP241 CNP283	99 108 108 108 85	80 80 90 0 0	-1 0 -1 0 0	98 107 108 108 85	2 4 4 4 4	101 110 114 114 91	65 65 65 65 65	-44 -44 -44 -44 -44	3 3 3 3 3	-20 -20 -20 -20 -20	40 40 49 49 30	58.0
S46b	Excavation of Tunnel Tubes (under cover of traffic deck)	Feb 2022 - May 2022	Excavator/Loader, Wheeled/Tracked Rock drill, crawler mounted (pneumatic) Ventilation Fan Water Pump, Submersible (Electric)	EPD-09560 SIL EIA CNP241 CNP283	99 108 108 108	80 80 90 0	-1 0 -1 0	98 107 108 108	2 3 3 3	101 112 112 112	80 80 80 80	-46 -46 -46 -46	3 3 3 3	-20 -15 -20 -20	37 57 28 30	55.2
S46c	Excavation of Tunnel Tubes (under cover of traffic deck)	Jun 2022 - Sep 2022	Excavator/Loader, Wheeled/Tracked Rock drill, crawler mounted (pneumatic) Ventilation Fan Water Pump, Submersible (Electric)	EPD-09560 SIL EIA CNP241 CNP283	99 108 108 108	80 80 90 0	-1 0 -1 0	98 107 108 108	2 3 3 3	101 112 112 112	155 155 155 155	-52 -52 -52 -52	3 3 3 3	-20 -20 -20 -20	31 32 32 38	49.1
S47a	Underpinning of Existing Bridges (under cover of traffic deck)	Jun 2020 - Dec 2020	Generator Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Crane Mobile Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP103 CNP021 CNP044 CNP047 BS D7-114 EPD-09560 CNP241 CNP283	95 90 109 109 101 101 99 85	100 70 60 2 0 0 90 100	0 -2 -2 -1 0 0 95 95	95 88 107 108 99 101 97 95	1 1 1 1 1 1 1 1	107 110 107 108 100 100 97 95	45 45 45 45 45 45 45 45	-41 -41 -41 -41 -41 -41 -41 -41	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	37 49 50 41 41 39 54 22	56.8
	Construction of the Cut and Cover Tunnel (under cover of traffic deck)	Feb 2022 - Nov 2022	Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Generator Crane Mobile Poker, Vibratory, Hand Held Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP0560 SIL EIA CNP241 CNP283	99 102 102 102 101 101 100 85	70 70 70 0 0 0 0 0	-2 -2 -2 0 0 0 0 0	88 107 100 100 99 100 97 95	1 1 1 1 1 1 1 1	107 110 108 108 100 100 97 95	45 45 45 45 45 45 45 45	-48 -48 -48 -48 -48 -48 -48 -48	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	30 49 50 41 41 39 35 33	61.3
S47b	Underpinning of Existing Bridges (under cover of traffic deck)	Oct 2020 - Apr 2021	Generator Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Crane Mobile Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP103 CNP021 CNP044 CNP047 BS D7-114 EPD-09560 CNP241 CNP283	95 90 109 109 101 101 99 85	100 70 60 2 0 0 90 100	0 -2 -2 -1 0 0 95 95	95 88 107 108 99 101 97 95	1 1 1 1 1 1 1 1	107 110 108 108 100 100 97 95	45 45 45 45 45 45 45 45	-48 -48 -48 -48 -48 -48 -48 -48	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	30 42 42 42 43 35 32 32	50.3
	Construction of the Cut and Cover Tunnel (under cover of traffic deck)	Jun 2022 - Mar 2023	Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Generator Crane Mobile Poker, Vibratory, Hand Held Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP021 CNP044 CNP047 CNP103 BS D7-114 EPD-09560 CNP241 CNP283	90 109 109 109 101 101 108 85	60 60 60 0 0 0 0 0	-2 -2 -2 0 0 0 0 0	88 107 100 100 99 100 97 95	1 1 1 1 1 1 1 1	107 110 108 108 100 100 97 95	45 45 45 45 45 45 45 45	-48 -48 -48 -48 -48 -48 -48 -48	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	23 43 43 33 35 35 36 33	54.8
S47c	Underpinning of Existing Bridges (under cover of traffic deck)	May 2020 - Sep 2020	Generator Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Crane Mobile Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP103 CNP021 CNP044 CNP047 BS D7-114 EPD-09560 CNP241 CNP283	95 90 109 109 101 101 99 85	100 70 60 2 0 0 90 100	0 -2 -2 -1 0 0 95 95	95 88 107 108 99 101 97 95	1 1 1 1 1 1 1 1	107 110 108 108 100 100 97 95	45 45 45 45 45 45 45 45	-48 -48 -48 -48 -48 -48 -48 -48	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	30 42 42 42 43 35 35 33	46.1
	Construction of the Cut and Cover Tunnel (under cover of traffic deck)	Oct 2022 - Jul 2023	Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Generator Crane Mobile Poker, Vibratory, Hand Held Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP021 CNP044 CNP047 CNP103 BS D7-114 EPD-09560 CNP241 CNP283	90 109 109 109 101 101 108 85	60 60 60 0 0 0 0 0	-2 -2 -2 0 0 0 0 0	88 107 100 100 99 100 97 95	1 1 1 1 1 1 1 1	107 110 108 108 100 100 97 95	45 45 45 45 45 45 45 45	-48 -48 -48 -48 -48 -48 -48 -48	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	23 43 43 33 35 35 36 33	50.6
S49	Underpinning of Existing Bridges (under cover of traffic deck)	Feb 2021 - Nov 2021	Generator Bar Bender and Cutter Concrete Lorry Mixer Concrete pump Crane Mobile Excavator/Loader, Wheeled/Tracked Ventilation Fan Water Pump, Submersible (Electric)	CNP103 CNP021 CNP044 CNP047 BS D7-114 EPD-09560 CNP241 CNP283	95 90 109 109 101 101 99 85	100 70 60 2 0 0 90 100	0 -2 -2 -1 0 0 95 95	95 88 107 108 99 101 97 95	1 1 1 1 1 1 1 1	107 110 108 108 100 100 97 95	45 45 45 45 45 45 45 45	-48 -48 -48 -48 -48 -48 -48 -48	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	23 31 50 51 42 40 40 36	57.9
S50a	Foundation (west side) for noise enclosure on GRF Flyover (Ferry Street Section)	Dec 2021 - May 2022	Generator Concrete Lorry Mixer Concrete pump Crane Mobile Excavator/Loader, Wheeled/Tracked Excavator, Vibratory Dump Truck with Grab	CNP103 CNP044 CNP047 CNP142 BS D7-114 EPD-09560 CNP050 CNP069 CNP142	95 109 109 105 101 101 105 111	100 60 60 70 70 70 70 80	0 -2 -2 -1 -2 -2 -2 -1	88 107 103 99 97 99 103 110	2 1 1 1 1 1 1 2	110 108 103 109 102 103 103 113	75 75 75 75 75 75 75 75	-46 -46 -46 -46 -46 -46 -46 -46	3 3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20 -20	19 38 31 50 44 44 44 16	67.9
	Construct noise barriers and noise enclosure on GRF Flyover (Ferry Street Section) and along Ting Ping Street	Nov 2022 - Jan 2023	Crane Mobile Generator Concrete Lorry Mixer Concrete pump Crane Mobile Excavator/Loader, Wheeled/Tracked Excavator, Vibratory Dump Truck with Grab	BS D7-114 CNP103 CNP044 CNP047 CNP142 CNP050 CNP069 CNP142	101 95 109 109 105 105 105	70 100 60 70 70 70 70	-2 -2 -2 -1 -2 -2 -2	99 108 103 103 103 103 103	1 1 1 1 1 1 1	108 108 108 108 108 108 108	95 95 95 95 95 95 95	-40 -40 -40 -40 -40 -40 -40	3 3 3 3 3 3 3	-20 -20 -20 -20 -20 -20 -20	28 38 31 50 42 42 42 16	57.5
S50b	Foundation (west side) for noise enclosure on GRF Flyover (Ferry Street Section)	Jul 2021 - Jul 2022	Concrete Lorry Mixer Concrete pump Generator Crane Mobile Bored Piling Crane mounted auger Excavator/Loader, Wheeled/Tracked Excavator, Vibratory Compactor, Vibratory Dump Truck with Grab	CNP044 CNP047 CNP103 CNP142 BS D7-114 EPD-09560 CNP050 CNP069	109 109 105 105 101 101 105 111	60 80 0 95 70 80 70 80	-2 -1 -2 -1 -2 -1 -2 -1	107 108 103 103 103 103 103 110	2 1 1 1 1 1 1 2	110 108 103 103 103 103 103 113	75 75 75 75 75 75 75 75	-43 -43 -43 -43 -43 -43 -43 -43	3 3 3 3 3 3 3 3	-5 -10 -5 -10 -5 -10 -5 -10	62 58 59 63 63 63 63 59	70.6
	Construct noise barriers and noise enclosure on GRF Flyover (Ferry Street Section) and along Ting Ping Street	Jun 2022 - Oct 2022	Crane Mobile Generator Concrete Lorry Mixer Concrete pump Crane Mobile	BS D7-114 CNP103 CNP044 CNP047 CNP142	101 95 109 109 105	70 100 60 70 70	-2 -2 -2 -1 -2	99 108 103 103 103	1 1 1 1	108 108 108 108	95 95 95 95	-43 -43 -43 -43	3 3 3 3	-5 -5 -5 -5	55 59	60.2

ISSN 1062-1024 N 0011000143 300 500 10000

- [1] For works that would be conducted in more than one works sites, the distance of the works site closer to the NSR is adopted in the assessment as the worst-case scenario
- [2] Works located outside 300m boundary of the NSR are not assessed

[3] For the calculation of sound pressure levels (SPL), the PMEs are a

[4] The concurrent work that is within 300m of the NSR, CKR YMTW section. Following the YMTW CNMMP, the noise level is extracted for

Build King - SKEC Joint Venture

Construction Noise Assessment

Period: 0700 to 1900 (except general holidays)

Noise Sensitive Receiver: W-P11 The Coronation (West Façade)

Mitigation Measures Scenario

Noise Criteria: 75dB(A)

Worksite	Activity	Period	PME	TM Ref. / other Ref.	Unit Quiet Plant SWL	On-time, %	Time Factor	Quiet Plant SWL with on-time %	No. of plants	Total SWL	Distance from Notional Sources, m	Distance Attenuation	Façade Correction, dB(A)	Barrier Correction, dB(A)	Predicted Noise Level, dB(A)	Total Predicted Noise Level for each group, dB(A)
S50d	Road works for re-align Ferry Street at-grade road	Oct 2023 - Dec 2023	Asphalt Paver	EPD-01126	104	80	-1	103	1	103	245	-56	3	-5	45	55
			Concrete Lorry Mixer	CNP044	109	60	-2	107	1	107	245	-56	3	-5	49	
			Concrete pump	CNP047	109	80	-1	108	1	108	245	-56	3	-10	45	
			Dump Truck with Grab	CNP069	105	70	-2	103	1	103	245	-56	3	-5	46	
			Generator	CNP103	103	100	0	103	1	103	245	-56	3	-10	40	
			Poker, Vibratory, Hand Held	CNP173	102	70	-2	100	1	100	245	-56	3	-10	38	
			Road Roller	EPD-01183	97	80	-1	96	1	96	245	-56	3	-5	38	
			Bored Piling Crane mounted auger	BS D4-37	111	80	-1	110	1	110	245	-56	3	-10	47	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	1	97	245	-56	3	-5	40	
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	245	-56	3	-5	42	
S51	Demolish the Existing Ferry Street Subway	Dec-20	Breaker, Excavator Mounted (Hydraulic)	BS D8-13	110	50	-3	107	1	107	200	-54	3	-5	51	55
			Dump Truck with Grab	CNP069	105	70	-2	103	2	106	200	-54	3	-5	50	
			Concrete crusher, excavator mounted	CNP055	103	80	-1	102	1	102	200	-54	3	-5	46	
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	200	-54	3	-5	43	
			Saw, Wire	CNP205	101	70	-2	99	1	99	200	-54	3	-5	43	
S56a	Construction of the Cut and Cover Tunnel (under cover of traffic deck)	May 2021 - Sep 2023	Bar Bender and Cutter	CNP021	90	60	-2	88	1	88	235	-55	3	-20	15	49
			Concrete Lorry Mixer	CNP044	109	60	-2	107	2	110	235	-55	3	-20	37	
			Concrete pump	CNP047	109	80	-1	108	1	108	235	-55	3	-20	36	
			Generator	CNP103	95	100	0	95	3	100	235	-55	3	-20	27	
			Crane Mobile	BS D7-114	101	70	-2	99	1	99	235	-55	3	-20	27	
			Poker, Vibratory, Hand Held	CNP173	102	70	-2	100	1	100	235	-55	3	-20	28	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	1	97	235	-55	3	-20	25	
			Ventilation Fan	CNP241	108	90	0	108	6	115	235	-55	3	-15	49	
			Water Pump, Submersible (Electric)	CNP283	85	100	0	85	6	93	235	-55	3	-20	20	
			Backfilling on Top of Cut and Cover Tunnel (under cover of traffic deck)	Jan 2024 - Apr 2024	Compactor, vibratory	CNP050	105	70	-2	103	1	103	235	-55	3	-20
S58	Construction of Temporary Maternal and Child Health Centre - Superstructure	Apr 2018 - Jun 2018	Generator	CNP103	95	100	0	95	2	98	235	-55	3	-20	26	47
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	2	100	235	-55	3	-20	28	
			Road Roller	EPD-01183	97	80	-1	96	1	96	235	-55	3	-20	24	
			Poker, Vibratory, Hand Held	CNP173	102	50	-3	99	1	99	160	-52	3	-5	45	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	1	97	160	-52	3	-5	43	
		Jul 2018 - Dec 2018	Bar Bender and Cutter	CNP021	90	60	-2	88	2	91	160	-52	3	0	42	57
			Concrete Lorry Mixer	CNP044	109	50	-3	106	2	109	160	-52	3	-5	55	
			Concrete pump	CNP047	109	70	-2	107	1	107	160	-52	3	-10	48	
			Generator	CNP103	95	100	0	95	2	98	160	-52	3	-10	39	
			Crane Mobile	BS D7-114	101	50	-3	98	1	98	160	-52	3	-5	44	
			Saw, Circular Wood	BS D7-79	103	50	-3	100	2	103	160	-52	3	-5	49	
			Excavator/Loader, Wheeled/Tracked	EPD-09560	99	70	-2	97	1	97	160	-52	3	-5	43	

Cumulative Exceedance (YMTW+YMTW), dB(A) -

[1] For works that would be conducted in more than one works sites, the

[1] For works that would be conducted in more than one works sites, the distance of the works site closer to the NSR is adopted in the assessment as the worst-case scenario
[2] Works located outside 300m boundary of the NSR are not assessed

[4] The concurrent work that is within 300m of the NSR, CKR YMTW section. Following the YMTW CNMMMP, the noise level is extracted for this assessment.

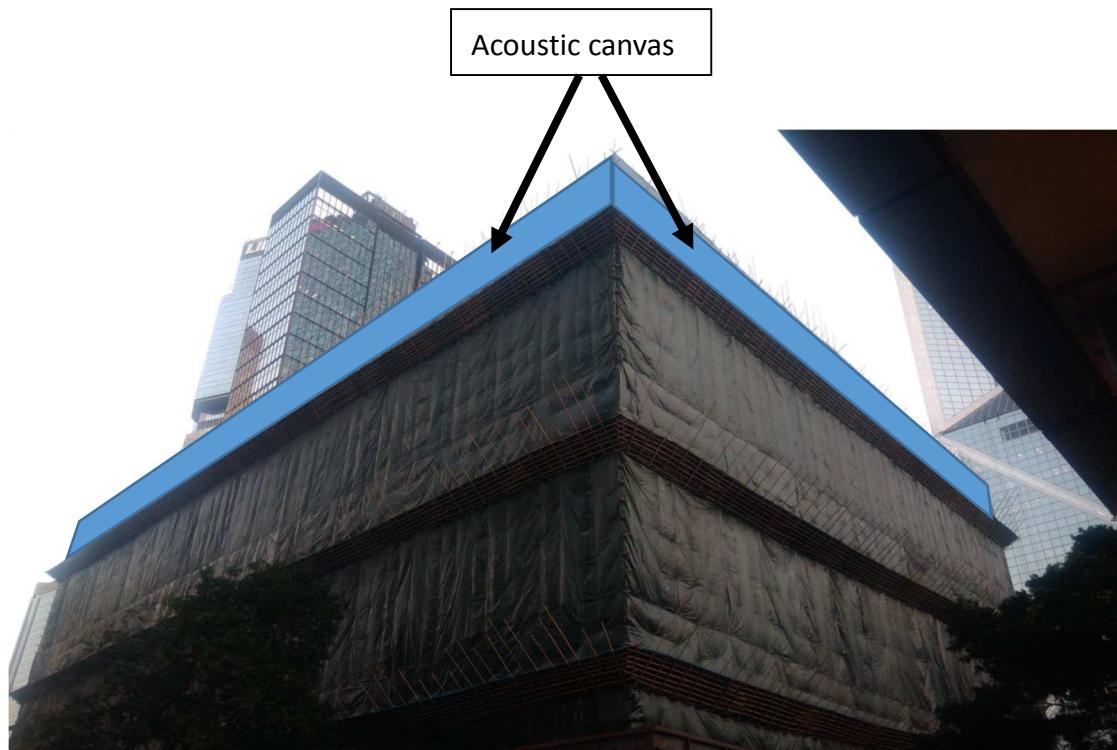
Appendix D

Distance between NSRs and Worksites

Appendix E

Details of Acoustic Noise Barriers for Demolition Works of YMT Yau Ma Tei Mult-storey Carpark Building

Temporary noise barrier will be erected at the floor to be demolished surrounding the 4 sides of the building



Model No. CK2009	High Tenacity Polyester PVC Laminated Fabrics
General Applications:	Construction, Marine (Field) covers, Storage covers and many other applications
Colors:	Yellow, Sky Blue, Green, Orange, Dark Green, White, Grey
Available Grades:	Fire-Retardant, Ultra-Violet, Anti-Mildew, Anti-Cold, Sound Insulated
Type of Products:	Roll Type
Raw Material Origin:	From Japan
Flammability Test Method:	BS 5867-2 2008
Sizes:	2M x 6M, 2M x 30M(roll type)

Sample name(provided by sponsor): PVC Tarpaulin
Color: Gray
Mass per unit area : 958 g/m²
Area, S, of test element : 3.8 m²
Air temp. in the test rooms : 27°C
Relative humidity in the test rooms : 58%
Receiving room volume : 67.9 m³

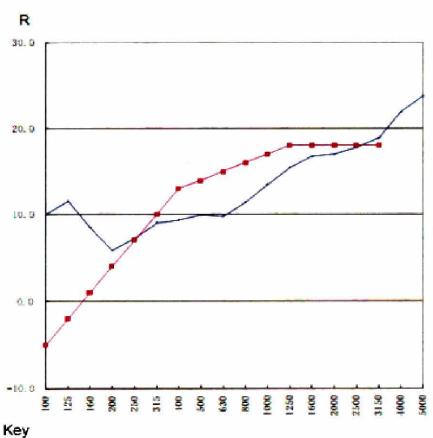


Physical Properties:

III. Test results

f Hz	R dB
100	10.1
125	11.6
160	8.6
200	5.9
250	7.3
315	9.1
400	9.4
500	10.0
630	9.9
800	11.5
1000	13.5
1250	15.5
1600	16.7
2000	17.0
2500	17.8
3150	18.9
4000	21.9
5000	23.9
Rw (C;Ctr)	14(-1;-2)

Fabric Detail 網布規格	1000D x 1000D x 20 x22		
Item 項目名稱	Test Method 執行標準	Unit 單位	Value 數據
Thickness 厚度	DIN53353	mm	1.0
Total Weight 總重量	DIN53352	g/m ²	1132.2
Tensile Strength 拉伸強度	DIN53354	N/5cm	經 Warp 3040 緯 Weft 2549
Elongation at Break 斷裂伸長率	DIN53354	%	經 Warp 17.3 緯 Weft 23.3
Tear Strength 撕裂強度	DIN53363	N	經 Warp 448 緯 Weft 374
Adhesion of Coating Strength 剝離負荷	DIN53357	N/5cm	經 Warp 123 緯 Weft 108
Remarks 備註			



Key
R—sound reduction index, in dB
f—frequency, in Hz



This technical data is offered as helpful suggestion only. It's accurate to the best of our knowledge at time of printing.

祥記帆布工程有限公司
Cheung Kee Canvas Ltd.

G/F., 352 Reclamation St., Kowloon, Hong Kong.
香港九龍新填地街 352 號地下
Tel: 2385 2644, 2780 7505 Fax: 2771 4599
url: <http://www.ckcanvasltd.com> email:contact@ckcanvasltd.com

Appendix F

Details of Acoustic Noise Enclosure or Barriers



Acoustics Innovation

SilentCUBE

Movable Noise Enclosure

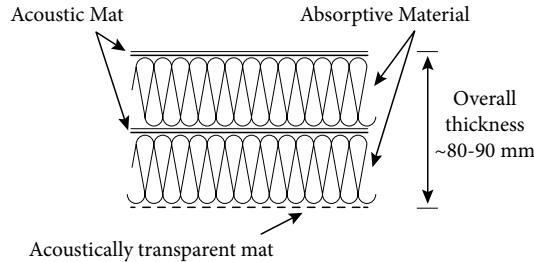
SilentCUBE is a movable noise enclosure for both indoor and outdoor use.

The lightweight design and user friendly installation mechanism enables contractors to quickly deploy and relocate SilentCUBE without using any specialized tools. Each CUBE can be seamlessly connected with another CUBE to accommodate larger machines.

SilentCUBE has been implemented in various construction sites, including:

- Night works conducted inside several MTR stations
- Road works at Tsuen Wan, Hoi Shing Road
- Concreting works for new office and education centre of Hong Kong Water Supplies Department in Tin Shui Wai

Section of Acoustic Panel



Product Specification

Modular Size (W) x (L)x (H)	1.5m x 1.5m x 2.2m 2m x 2m x 2.2m 2.5m x 2.5m x 2.2m
Modular Weight	~80kg
Insertion Loss*	18 dB(A)
Surface Density	3kg/m ²
Setup Time	10 mins by 4 people
Standard Colour	Grey
Ideal Solution for	<ul style="list-style-type: none"> • Hand-held Breaker • Vibratory Poker • Concrete Saw / Circular Saw, etc • Hammering and other PCW

* Tested with white noise source

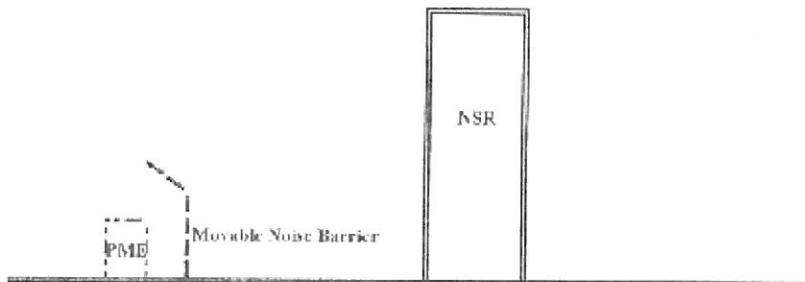


SilentCUBEs seamlessly connected with good gap sealing

Shatin to Central Link

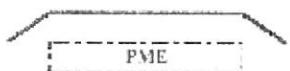
Works Contract 1108 – Kai Tak Station and Associated Tunnel

Section View of Movable Noise Barrier



Movable noise barrier composed of minimum 50mm thick sound absorbing lining and 10mm thick plywood (or 1mm thick steel) backing with a cantilevered upper portion located within 5m from any static or mobile plant. PME will be totally screened when viewed from the NSR.

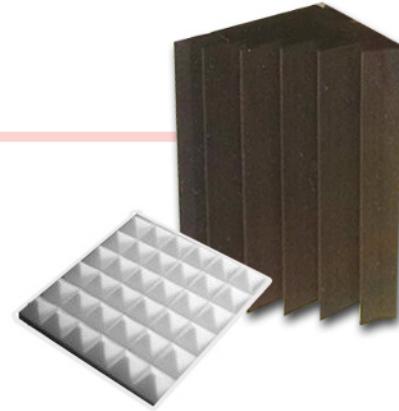
Plan View of Movable Noise Barrier



Static or mobile PME will be totally screened when viewed from the NSR.

吸音棉 SOUNDPROOF FOAM

吸音棉，學名為阻燃聚氨酯聲學泡沫是一種新型吸聲材料，具有重量輕，耐潮，可切割成形，施工安裝方便等優點。在泡沫塑料的背面塗上萬能膠，可將泡沫塑料吸音棉直接在需要吸聲的地方，施工十分方便。



吸音棉被廣泛應用於建築聲學和噪聲控制工程中，例如：隔聲屏吸聲層，空調消聲器，廠房車間吸聲降噪以及影劇院、禮堂、廣播電視錄音播音室等工程中控制混響時間，音箱內的吸音及改善室內音質等等。

吸音棉具有獨特的構造，細微多孔隙能有效吸收衰減聲波的能量，波浪型和金字塔型吸音棉在中頻與高頻音(500Hz~2000Hz)之吸音效果甚佳。若是低頻音的處裡，則可選用三角柱體型，可將低頻做最大的降噪處理。

波浪型H25,H40,H50,H75 (經濟之選)

size: 1.5m x 2m

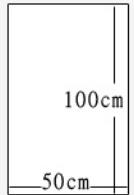
●厚度

2.5cm, 4.0cm, 5.0cm, 7.5cm



●規格

200cm X 100cm



●密度

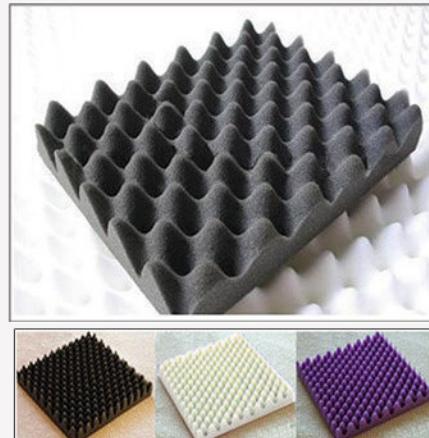
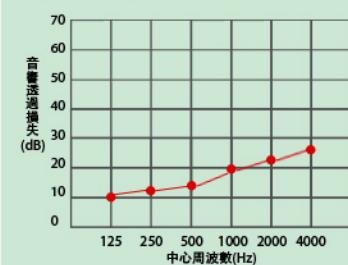
16kg/m²

●顏色

黑色，白色和紫色

中心周波數 (Hz)	125	250	500	1000	2000	4000
音響透過損失 (dB)	10	12	15	20	25	28

● 音響透過損失

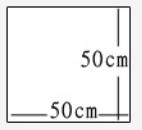


金字塔型T50,T75 (質量之選)

●厚度
5.0cm, 7.5cm



●規格
50cm X 50cm



●密度

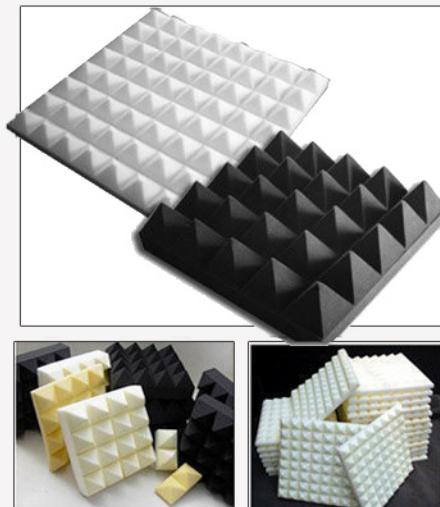
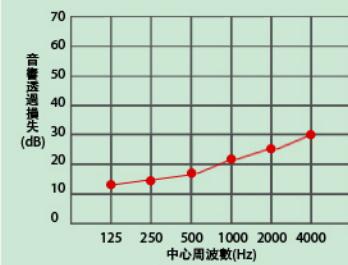
18kg/m²

●顏色

黑色和白色

中心周波數 (Hz)	125	250	500	1000	2000	4000
音響透過損失 (dB)	12	15	18	22	27	30

● 音響透過損失



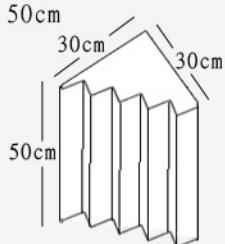
三角柱體型TR50 (重低音之選)

●厚度
30cm



●規格

30cm x 30cm x 50cm



●密度

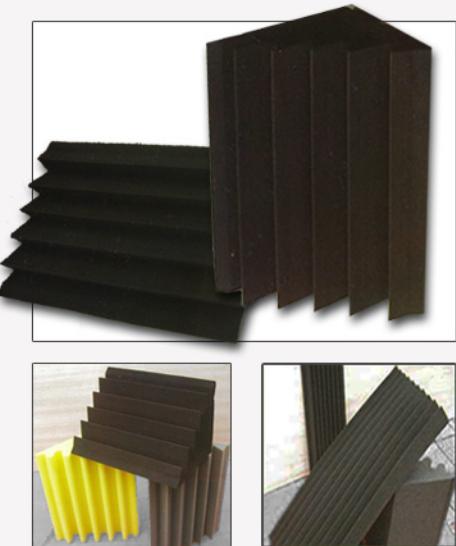
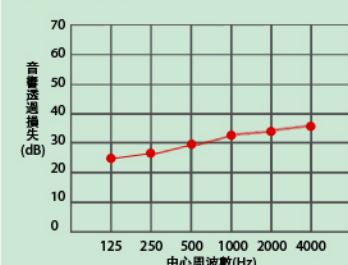
20kg/m²

●顏色

灰黑色

中心周波數 (Hz)	125	250	500	1000	2000	4000
音響透過損失 (dB)	25	28	30	32	34	36

● 音響透過損失



Soundproof Testing
of
Foam



2008000188Z



(2004)国认监认字(047)号



检 测
CNAS L0846

检验报告

玻纤质检(WSW)字 第(1111875)号

(副本)

产品名称 波浪海棉

委托单位 [REDACTED]

检验类别 委托检验

国家玻璃纤维产品质量监督检验中心

二〇一一年五月五日

国家玻璃纤维产品质量监督检验中心

检 验 报 告

玻纤质检(WSW)字 第(1111875)号 共2页 第1页

产品名称	隔音毡	规格型号	Vinco-2.0
商 标	坤耐	样品状态	海棉制品
委托单位	[REDACTED]	检验类别	委托检验
生产单位	[REDACTED]	样品等级	——
抽样地点	——	送样日期	2011年11月29日
样品数量	约(300×300)mm, 2块	送 样 者	[REDACTED]
抽样基数	——	生产日期	——
检验依据	试验方法详见附页	检验项目	隔声量
检 验 结 论	样品经检验, 隔声量测定值详见附页(第2页)。 声明: 本检验结论仅对来样负技术责任。		
备 注			

批准: [Signature]

审核: [Signature]

(检验报告专用章
2011年12月05日)

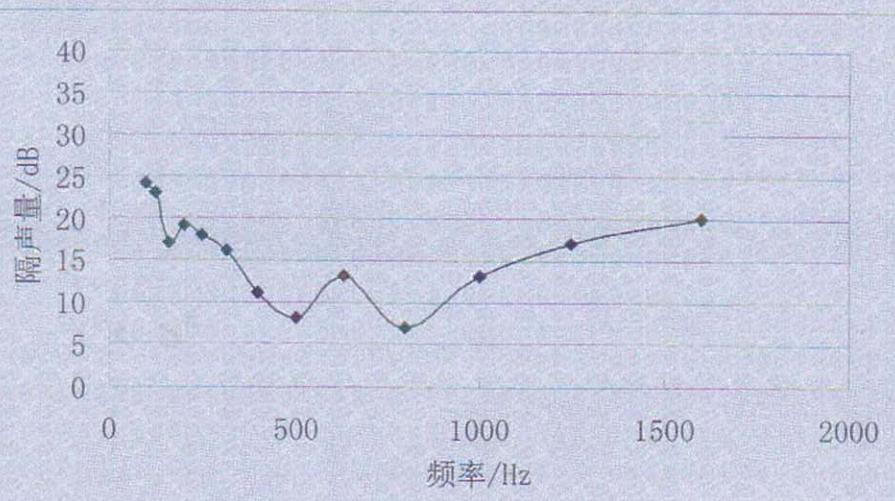
国家玻璃纤维产品质量监督检验中心

检 验 报 告 附 页

玻纤质检(WSW)字 第(1111875)号 共2页 第2页

检验项目	试验方法	测定值
隔声量 dB	100Hz	24
	125Hz	23
	160Hz	17
	200Hz	19
	250Hz	18
	315Hz	16
	400 Hz	11
	500 Hz	8
	630 Hz	13
	800 Hz	6
	1000 Hz	13
	1250 Hz	16
	1600 Hz	20

检验报告专用章



编 制: 2011/5/2

Smouldering &
Flammability Test
of
Foam



STC Test Report

Date: 2009-09-16

Page 1 of 3
(DUPLICATE)

No: HT196402

Description of Sample(s)	: Two (2) groups submitted sample in black colour said to be (A) SPONGE Size: 12 inch x 3 inch x ½ inch (20pcs) (B) SPONGE Size: 8 inch x 7 ½ inch x 2 inch (6pcs) 8 inch x 4 inch x 2 inch (6pcs) Country of Destination: U.S.A
Date sample(s) Received	: (A) 2009-08-11 (B) 2009-09-11
Date Tested	: (A) 2009-08-11 to 2009-08-17 (B) 2009-09-11 to 2009-09-16
Investigation Requested	: Selected test(s) as detailed herein.
Conclusion(s)	: 1. The submitted sample A complied with CAL TB 117:2000 Section D Part II. 2. The submitted sample B complied with CAL TB 117: 2000 Section A Part I.

This Test Result of Sample A refers to our previous Test Report, HT196092 issued on 2009-08-17.



CHENG Chun-iyu, David
Authorized Signatory
Textile and Materials Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

SATRA Accredited Laboratory
International Safe Transit Association (ISTA) Certified Laboratory
Members of
Hong Kong Apparel Society Limited
Hong Kong Footwear Association

Approved Laboratory of The Woolmark Company
The Govmark Fire Laboratories Certified Laboratory

Hong Kong Association for Testing, Inspection and Certification Limited
Knitwear Innovation and Design Society (KIDS)

The Hong Kong Standards and Testing Centre Ltd.

10 Dai Wang Street, Tai Po Industrial Estate, N.T., Hong Kong
Tel: (852) 2656 1858 Fax: (852) 2654 4353 E-mail: hksstc@hkstc.org Homepage: www.stc-group.org

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STC Test Report

Date: 2009-09-16

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No: HT196402

TEST RESULTS:

1. Smouldering Screening Test

Ref. California Technical Bulletin No. 117-2000, Section D, Part II, Resilient Cellular Materials

Test Method

The apparatus and methods of testing were those described in California Technical Bulletin No. 117, Section D, Part II, for testing the smouldering tendency of resilient cellular materials used in upholstered furniture.

Test Results: Sample A

Trial	Percentage (%) of non-smouldered residue	Comment
1	99.9	Pass
2	99.9	
3	99.9	
Average	99.9	
Requirement:	All test specimens greater than 80% non-smouldered residue.	

2. Flammability Test

Ref. California Technical Bulletin No. 117-2000, Section A, Part I, Resilient Cellular Materials

Test Method

The apparatus and methods of testing were those described in California Technical Bulletin No. 117, Section A, Part I, for testing the flame retardancy of resilient cellular materials used in upholstered furniture.

Test Results: Sample B

Before Aging			
Specimen	After flame time (nearest 0.1 second)	Char length (nearest 0.1 inch)	After glow time (nearest 0.1 second)
1	Nil	1.6	Nil
2	Nil	2.1	Nil
3	Nil	2.6	Nil
4	Nil	1.7	Nil
5	Nil	2.1	Nil
Average	Nil	2.0	Nil
Requirement			
Individual	≤ 10 seconds	≤ 8 inches	/
Average	≤ 5 seconds	≤ 6 inches	≤ 15 seconds

The Hong Kong Standards and Testing Centre Ltd.

10 Da Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2666 1833 Fax: (852) 2664 4363 Email: hksat@hksat.org Homepage: www.hksgroup.org

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STC Test Report

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No: HT196402

TEST RESULTS:

After Aging			
Specimen	After flame time (nearest 0.1 second)	Char length (nearest 0.1 inch)	After glow time (nearest 0.1 second)
1	Nil	1.5	Nil
2	Nil	2.3	Nil
3	Nil	1.6	Nil
4	Nil	1.9	Nil
5	Nil	2.3	Nil
Average	Nil	1.9	Nil
Requirement			
Individual	≤ 10 seconds	≤ 8 inches	/
Average	≤ 5 seconds	≤ 6 inches	≤ 15 seconds

Comment : Pass

***** End of Test Report *****

The Hong Kong Standards and Testing Centre Ltd.

10 Da Wang Street, Tai Po Industrial Estate, N.T., Hong Kong

Tel: (852) 2656 1808 Fax: (852) 2664 4353 E-mail: hts@stds.org.hk Homepage: www.stdsgroup.org

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Hong Kong Job Reference
of
Foam



綽基建築科技有限公司

Tracki Building Technology Ltd

Job Reference

Soundproof Foam

Liantang/Heung Yuen Wai

Boundary Control Point

site formation and infrastructure works

- Contract 5 CV/2012/09

Chun wo C&E Company Ltd

Residential Development

RBL 1190, No v 8-12

Deep Water Bay Drive

K. H. Foundations Ltd



Appendix G

Implementation Schedule of Proposed Mitigation Measures

Implementation Schedule of Mitigation Measures

CNMMP/ EIA Ref.	Proposed Mitigation Measures	Target PME	Implemented by	Location	Period	Requirements or Standard to be achieved
Paragraph 2, S3.2 of CNMMP	Movable temporary noise barriers	Asphalt paver, excavator etc.	Main Contractor	All areas in CKR- YMTE	Apr 2018 – Nov 2024	Annex 5, TM- EIAO
Paragraph 2, S3.2 of CNMMP	Noise enclosure	Air compressor, generator	Main Contractor	All areas in CKR- YMTE	Apr 2018 – Nov 2024	Annex 5, TM- EIAO
Paragraph 2, S3.2 of CNMMP	Traffic decking over construction site	All PME to be operated under traffic deck	Main Contractor	Areas involving excavation of cut and cover tunnel	Mar 2019 - Dec 2023	Annex 5, TM- EIAO
Paragraph 2, S3.2 of CNMMP	Noise barrier for building demolition	Crusher, breakers etc.	Main Contractor	Yau Ma Tei Multi- storey Carpark Building	Nov 2020 – Apr 2021 & May 2022 – Jul 2022	Annex 5, TM- EIAO

CNMMP/ EIA Ref.	Proposed Mitigation Measures	Target PME	Implemented by	Location	Period	Requirements or Standard to be achieved
S5.4.1 of EIA report	<p>Implement the following good site practices:</p> <ul style="list-style-type: none"> ● Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme ● Machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; ● Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; ● Silencers or mufflers on construction equipment should 	All PME	Main Contractor	All areas in CKR-YMTE	Apr 2018 – Nov 2024	Annex 5, TM-EIAO

	<p>be properly fitted and maintained during the construction works;</p> <ul style="list-style-type: none"> ● Mobile plant should be sited as far away from NSRs as possible and practicable; ● Material stockpiles, mobile container site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities. 					
S5.4.1 of EIA report	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of hoardings shall be properly maintained throughout the construction period.	All PME	Main Contractor	All areas in CKR-YMTE	Apr 2018 – Nov 2024	Annex 5, TM-EIAO
S5.4.1 of EIA report	Use 'Quiet plant'	Refer to Table 2.2	Main Contractor	All areas in CKR-YMTE	Apr 2018 – Nov 2024	Annex 5, TM-EIAO
S5.4.1 of EIA report	Sequencing operation of construction plants where practicable	All PME	Main Contractor	All areas in CKR-YMTE	Apr 2018 – Nov 2024	Annex 5, TM-EIAO
S5.4.1 of EIA report	Implement a noise monitoring programme under EM&A programme	All PME	Main Contractor	Noise Sensitive Receivers	Apr 2018 – Nov 2024	Annex 5, TM-EIAO